'Where Do We Go From Here?' In Residential Air Conditioning

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Where Do We Go From Here?
Principal Gripes
Best Is Yet to Come
Candid Advice

Stories of the Week

No doubt you've seen those bulky coin-operated machines which dispense blocks or cubes of ice. They've been a life-saver for the ice industry (and for party-givers, too).

Nevertheless, it's obvious that their owners and users have problems. Prominently placed above the three coin slots on one such machine in Grand Rapids, Michigan, is this sign:

"If everything else fails, please read directions above."

Assistant manager of the Pantlind hotel in Grand Rapids claims he received this telegram from a St. Joseph, Mich., man:

"Please reserve suitable accommodations where I can put up with my wife Oct. 2."

Where Do We Go From Here?

In an attempt to get background information for the special issue of the NEWS you now are reading, "Dope" has traveled literally thousands of miles in the last two and a half months.

We have talked with most of the major manufacturers of residential air conditioning and heating equipment, we have sat in on contractors' conventions, attended meetings of ASRE and ASHAE sections in many parts of the nation, and have interviewed servicemen and installers, architects and consulting engineers. Out of these hundreds of hours of listening comes one clear-cut opinion, to wit:

There isn't anything wrong with residential air conditioning that a couple of hot summers, back-to-back, couldn't cure.

Principal Gripes

To be sure, there are plenty of things which need to be bettered, and almost as many different types of complaints as there are people engaged in the business. Principal gripes:

1. Too much engineering in the field and not enough at the factory. At present approximately 50% of the cost of a residential air conditioning sys-

(Continued on Page 16, Col. 1)

Too Few Contractors Seek Home Market

DETROIT—"Where do we go from here in residential air conditioning?"

This is an obvious question in view of "disappointing" sales over the past two years—sales that were actually pretty good but not nearly so high as had been confidently predicted.

If there is any single factor that can be pointed to as the reason for the failure to reach expected sales goals, it is the fact that not enough contractors choose to concentrate their efforts on year-round residential air conditioning. Where a contractor has concentrated or "specialized" his efforts in this market, a genuine improvement in sales has shown up.

Searching for possible solutions, the NEWS is devoting this entire issue to the problem, attacking it on several fronts:

What do industry executives think?

What do consumers think?

What are contractors trying to do on their own or with manufacturers' help?

What do industry executives think of the problem? Many of them came up with provocative answers to a series of nine questions posed by the editors of the NEWS, but no simple solution that would automatically increase sales was suggested or even implied—for the very probable reason that there is no simple solution.

There was mixed reaction, for example, to the question "do enough families truly want complete home air conditioning to provide a substantial market with real growth possibilities?"

In certain areas, yes. Generally, no, or at least "they don't want it bad enough to go out and force us to sell it to them," said one executive; "it is doubtful that enough families want it more than they want some other convenience or necessity costing the same money as today's central air conditioners," declared another; "no, not yet," commented a third, adding "the industry has not yet done a good enough job of selling the multitudinous benefits of central year-round air conditioning."

Have installation practices and costs dampened enthusiasm for the product?

Majority of executives think so, but some do not believe this is too important a factor.

On the potentially "hot" topic of "internecine warfare" between the various segments of the residential industry and how it may be affecting overall sales, most executives don't seem overly concerned. One senses the feeling that they think maybe it would be a fine idea if everyone could get together in general promotion of residential air conditioning.

What about room units, dehumidifiers, fans, electronic filters, etc. Has their promotion retarded year-round residential air conditioning?

An almost unanimous "no" was the answer to this question. In fact, promotion of these items has, and is, helping sell central systems, they believe.

Similar unanimity was voiced in answering four other questions:

1. Few contractors were making a real effort to pene-

(Concluded on Page 6, Col. 3)

Cory, Mitchell Suspend Output Of Conditioners

CHICAGO—Because of "unusually cool weather and disturbed market conditions resulting therefrom," Mitchell Mfg. Co., a division of Cory Corp., will not manufacture air conditioners next year, J. W. Alsdorf, president, advised Mitchell air conditioner distributors in a letter terminating franchises.

Output of Cory's "Fresh'nd-Aire" air conditioners will also be suspended.

The company indicated that air conditioner production might be resumed when market conditions improve.

Mitchell will continue to make dehumidifiers and to operate the Air Conditioner Service Dept.

Room air conditioner inventories have been eliminated but there are a few central units in stock, according to Cory.

New Groups Ask Room Unit Tax Extension Delay

WASHINGTON, D. C.—Postponement of a proposed ruling that would extend the 10% excise tax to cover all room air conditioners regardless of size has been asked by two more organizations.

The National Retail Merchants Association and the Federal Excise Tax Council, Inc. have asked the Internal Revenue Service to hold off action until Congress reconvenes and has an opportunity to take legislative action.

NRMA suggested that action be delayed until at least May 1, 1959. FETC set no time limit.

The anticipated change, FETC estimated, would increase the industry's tax burden from about $6 million to $25 million. Putting the tax into effect soon would force new 1959 taxed units to compete with non-taxed carry-over units from 1958, FETC indicated.

Pride of Possession PLUS Pride of Occupation Should Boost Home Air Conditioning Sales Progress

("Conscience of the Industry" Editorial By George F. Taubeneck)

WHAT'S WRONG with residential air conditioning? Why hasn't it lived up to its early promise? How is it that so many dealers, contractors, wholesalers, and manufacturers are flugging up that business—or abandoning it?

Frankly, residential air conditioning hasn't nearly the consumer "sex appeal" many of its proponents have imagined during its more optimistic period. We've learned that:

Women don't want it, particularly—and housewives rule the roost in terms of home improvement expenditures. Women, you see dress sensibly skimpily in summertime. Hot weather doesn't bother them nearly so much as humidified warmth fries males who wear conventional suits, collars, and neckties. (If comfort were a prime buying urge for women, they wouldn't wear such outlandish shoes.)

In the second place, *there are so many other things women want MORE!* (Like a fur coat, say, or new living room furniture.) Possibly that's why residential air

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Won't Buy Sutton Factory—Fedders

NEW YORK CITY—Executives of Fedders-Quigan Corp. have visited the Wichita, Kan. plant of O. A. Sutton Corp. and considered the possibilities of purchasing the factory, but have definitely decided against it, a company official said recently.

New SMAC Group To Broaden Promotion

WASHINGTON, D. C. — In order to maintain the initiative established by Project SMAC, the all-industry program to "Sell More Air Conditioning," and to broaden the base group of interested firms, the Interim Managing Committee of the Project established the Air-Conditioning Marketing Council.

This was the announcement made concurrently by William A. Bours, III, chairman of the Interim Managing Committee for Project SMAC, to the Room Air Conditioner Section of the

(Concluded on Page 4, Col. 6)

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Dependable Prescription for Refrigeration & Air Conditioning Equipment

Rx Always Specify READING Copper Tubing

Made by Copper Tube SPECIALISTS

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA

Cobell Names Lucas National Sales Mgr.

CLEBURNE, Texas — Cobell Industries, Inc. here has appointed George Lucas as national sales manager, according to Harold Bailey, executive vice president.

Lucas will head national sales of the firm's "Rangaire" air conditioning and heating equipment. He was formerly regional sales manager for Mitchell Mfg. Co. and has been associated with air conditioning sales work for 12 years.

At the same time, Cobell announced a stepped up advertising and sales promotion program designed to strengthen its position in the industry.

Cobell also announced the appointment of Project Development Engineers, Pensacola, Fla., as sales representative in Florida, Alabama, and Georgia.

CERTIFICATION program for unitary air conditioners, initiated last May as a cooperative project of the Air-Conditioning & Refrigeration Institute and the National Warm Air Heating & Air-Conditioning Association, becomes effective Jan. 1, 1959, and will cover thousands of residential and commercial type air conditioners. Participating manufacturers certify to ARI by submitting data, and certify to the public by display of a certification seal (shown above) that their products are in compliance with the ARI Standard 210-58. A list of companies which have entered into contracts to participate will be made public soon after the meeting of ARI's Unitary Air-Conditioner Section on Nov. 12, at which final details for operation of the program will be completed.

LOST

space in your building

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with

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OUTDOOR COMPRESSOR

Why lose dollar-making storage and selling space to house compressors, when you can now use the Kramer Outdoor Compressor? The THERMOBANK COMPRESSOR SYSTEM is factory assembled, tested and run-in; it saves installation time and money.

The refrigeration industry again finds Kramer blazing a new path with its THERMOBANK SYSTEM—the original and only automatic re-evaporating, non-overloading, fastest hot gas defrost system—now engineered to perform unfailingly, not only in a heated space but in any unheated space or outside at any outdoor temperature.

WRITE FOR BULLETIN TC 406A

KRAMER TRENTON CO. Trenton 5, N. J.

45 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Invite RACCA, 5 Other Contractor Groups To Join JIPC

WASHINGTON, D. C.—Formal invitation to join the Joint Industry Program Committee of the Plumbing Heating, and Air Conditioning Industry has been extended by John M. Rhoades, general chairman of the committee, to top officials of six contractor associations within the industry.

Included among those invited is the Refrigeration & Air Conditioning Contractors Association.

At present JIPC is composed of representatives of the National Association of Plumbing Contractors, the Mechanical-Contractors Association of America, and the United Association of Plumbers and Pipe Fitters (AFL-CIO).

A sub-committee of lawyers representing the various associations has been given the task of preparing a brief constitution and bylaws so JIPC can be formally established as a joint organization within the industry, Rhoades said.

New members are expected to be formally seated at the next meeting held by JIPC, which has been scheduled for Jan. 9, 1959.

Buffalo Forge Elects Heath President as Wendt Retires

BUFFALO — William R. Heath has been elected president of Buffalo Forge Co., succeeding Edgar F. Wendt who announced his retirement at the Nov. 3 meeting of the board of directors.

Heath has been with the company for 36 years, starting in engineering. He became chief engineer in 1948, director of manufacturing in 1951, a vice president in 1953, and executive vice president in 1955.

After 29 years as president and 47 years with the company, Wendt will continue an active interest as a director, according to the announcement.

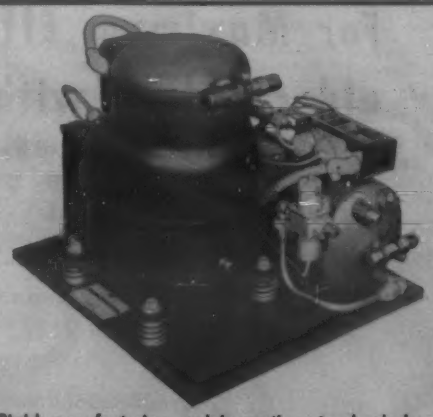
Mr. Albert Fogel, President, Howard Refrigerator Co., Inc., Philadelphia, Pa.

"A TRIAL ORDER SHOWED ME THESE SUPERIOR COMPRESSORS DELIVER LONG, TROUBLE-FREE SERVICE"

A provocative statement! It refers to Bendix-Westinghouse condensing units and comes from Albert Fogel, President of Howard Refrigerator Company, with a background of over fifty years' designing and manufacturing experience.

Mr. Fogel adds: "We believe Bendix-Westinghouse engineering is an important reason why our customers are getting the best performing condensing units on the market today. Placing my first order for Bendix-Westinghouse condensing units was a sound decision that I'll never regret. Because they are more dependable and have reduced our line rejects, we've adopted them as standard equipment on our beverage coolers, reach-ins, dual temperature reachins, full vision wall display cases, and a number of other models in our wide line of commercial refrigeration equipment."

There are nearly 200 other new users of Bendix-Westinghouse products who agree with Mr. Fogel—manufacturers who have discovered the extra value you get at no extra cost when you buy Bendix-Westinghouse compressors and condensing units. Maybe you, too, would be wise to send us an order!



Rigid manufacturing and inspection standards have reduced line rejects as much as 75%.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.

BHC Will Unveil Hydronics Promotion Campaign for '59

NEW YORK CITY — Better Heating-Cooling Council's hydronics promotion campaign for 1959 will be unveiled at the third annual meeting of the council in the Quadrille Room of the St. Moritz hotel here Nov. 17-19.

Next year's program will include a home builder's sales kit to help sell more homes and hydronics, a speaker's bureau to reach home builders across the nation, and new ways to boost hydronic sales in commercial and industrial markets, according to Franklin Greene, executive director.

Emphasis will be placed on help at the local level.

Most sessions of the meeting are open.

Arkla Elects May Board Chairman

SHREVEPORT, La.—Chester L. May was elected chairman of the board of directors of Arkla Air Conditioning Corp. at a regular meeting of the board here.

May retired recently as senior vice president of Lone Star Gas Co., Dallas.

At the same meeting the Arkla board elected Robert K. Eskew, of Evansville, Ind., a vice president. Eskew is director of research, development, and engineering for Arkla.

Election of May and Eskew was announced by W. R. Stephens, president and chairman of the board of Arkansas Louisiana Gas Co., of which Arkla Air Conditioning Corp. is a wholly-owned subsidiary. Stephens said May would establish offices in Dallas.

Examiner Recommends New Mexico Local Be Told To Bargain with Contractor Group

ALBUQUERQUE, N. M. — Trial Examiner Herman Marx has recommended to the National Labor Relations Board that Local 49 of the Sheet Metal Workers Association be ordered to bargain collectively, upon request, with the New Mexico Sheet Metal Contractors Association, Inc.

The union was accused of attempting "to drive a coercive wedge between the association and the employers it represents with the object of compelling the employers to abandon the association as their collective bargaining representative and substitute individual for group bargaining."

Marx further recommended that the union be ordered to cease requesting employes subject to the contract signed by the association and the union on Aug. 14, 1957 to strike without complying with the written notice provisions of the National Labor Relations Act.

A third recommendation was that the union be ordered to cease restraining or coercing association members in their selection of the association or any other persons or groups as their bargaining representatives.

Marx' report indicated that the business agent of the union had refused to renegotiate the 1957 contract with the association but was willing to negotiate with the members individually.

To this end he advised the association that the contract would terminate on March 31, 1958 and on April 1 called union members out on strike. A temporary restraining order against the union brought the men back to work a month later, it was pointed out.

SMAC Promotion

(Concluded from Page 1, Col. 5)

National Electrical Manufacturers Association and to the Board of Directors of the Air-Conditioning & Refrigeration Institute at the board's recent meeting at Point Clear, Ala.

Project SMAC was originally underwritten by the board of directors of ARI.

The membership of the Marketing Council is presently made up of individual companies who have made separate contributions to the financial support of Project SMAC. Membership at present consists of 12 firms:

Airtemp Div., Chrysler Corp.; Carrier Corp.; E. I. du Pont de Nemours & Co., Inc.; Fedders-Quigan Corp.; General Electric Co.; Hupp Corp.; Lennox Industries, Inc.; Tecumseh Products Co.; The Trane Co.; Westinghouse Electric Corp.; Worthington Corp.; and York Div., Borg-Warner Corp.

Although the present membership is constituted of the above companies, Bours indicated that all other firms in the air conditioning industry who contribute to the program are most welcome, and will become members of the Air-Conditioning Marketing Council.

"By incorporating the SMAC program under the banner of the Air-Conditioning Marketing Council, the program will have a more general industry-wide appeal, especially to those companies who are in the industry but do not belong to any particular trade association," it was stated.

The SMAC program is being carried out by John S. Robinson as full-time director. Robinson was formerly a sales executive of the Permaglas Div. of A. O. Smith Corp.

Robinson said that he had found a great desire among the top executives of member firms to continue with an industry program, and to cooperate on it.

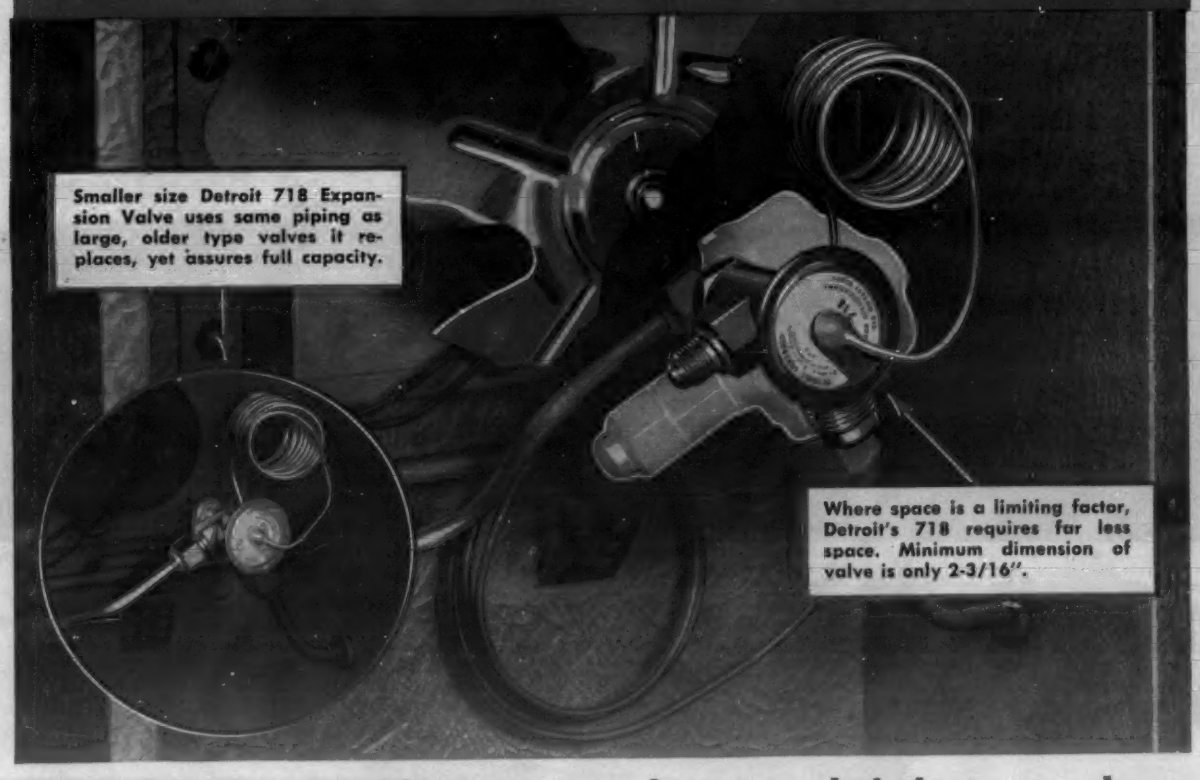
He said that over $40,000 had already been invested in this program. With that money, a pilot motivational study has been conducted and the results of this research will result in the production of an eight-page, well-documented booklet on benefits, with appeal directed along lines indicated by the motivational study, it was pointed out.

Efforts are being made, he declared, to harness all industry promotion channels, to tell a coordinated benefits story, though each segment will continue its own promotional program.

NAHB To Hold Convention, Exposition Jan. 18-22

WASHINGTON, D. C — National Association of Home Builders will hold its annual convention and exposition in Chicago Jan. 18-22, Daniel B. Grady, chairman of the convention committee, has recently announced.

SEE .. how DETROIT'S 718 Compact Capacity Valve will replace older type valves without repiping


Smaller size Detroit 718 Expansion Valve uses same piping as large, older type valves it replaces, yet assures full capacity.
Where space is a limiting factor, Detroit's 718 requires far less space. Minimum dimension of valve is only 2-3/16".

For Maximum Efficiency and Dependability, replace older valves with DETROIT'S 718 Expansion Valve

- **Smallest Valve per Ton of Refrigeration** Broader use in more limited spaces
- **Close Superheat Control** Minimizes surge for maximum valve operating efficiency
- **Broad Range of Application for its Size** ½ to 3 tons R-12 ½ to 5 tons R-22
- **Custom Charges** L, C and Z charges available
- **Easier to Service** Entire valve easily disassembled for inspection or cleaning
- **Connection Sizes** ¼ and ⅜ S.A.E. Inlet with strainer; ½ S.A.E. Outlet

For complete information see your DETROIT Wholesaler or write for Bulletin 262.

Detroit Controls Division of American-Standard, 5900 Trumbull Avenue, Detroit 8, Michigan

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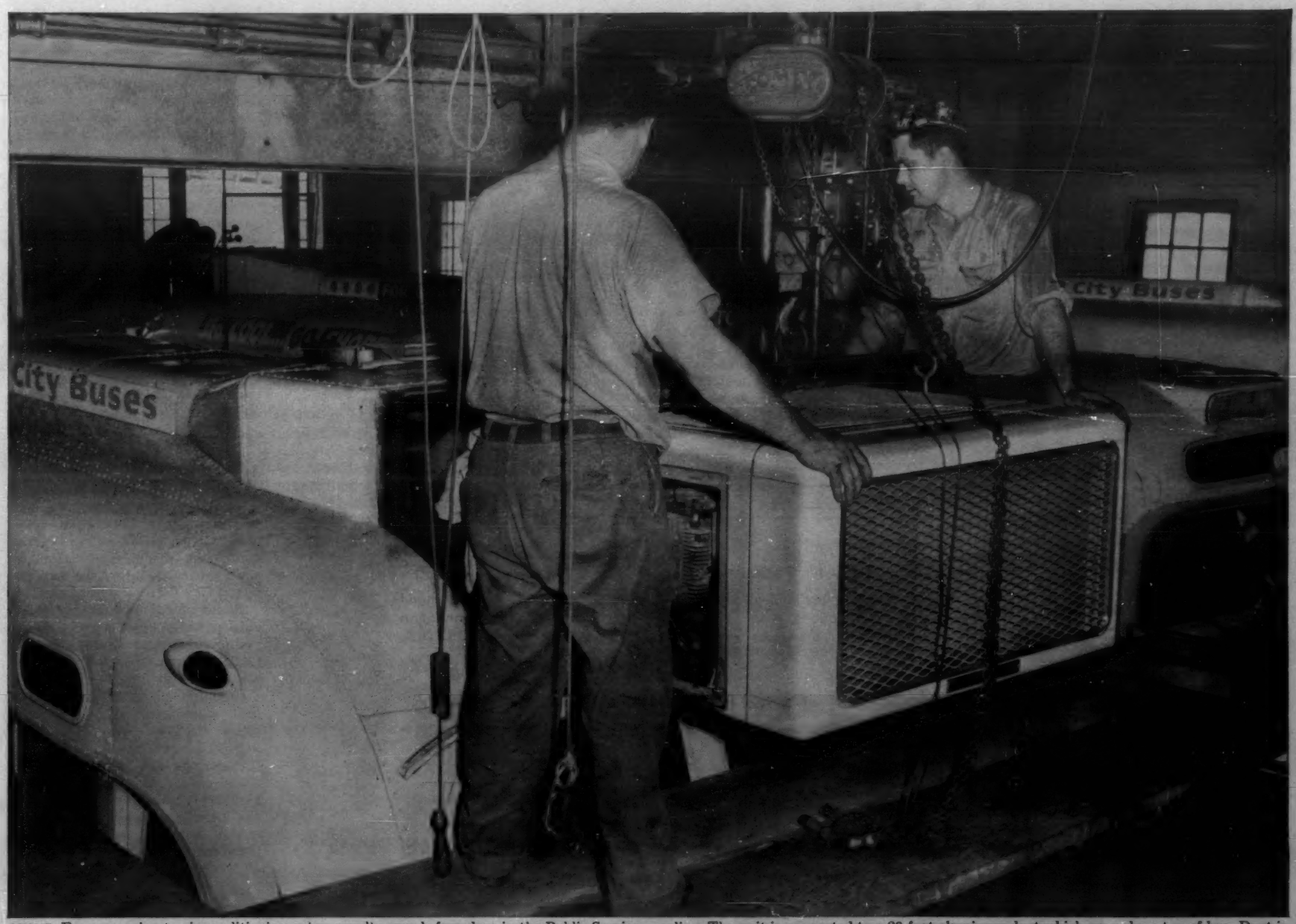


ABOVE: For conversion to air conditioning, a bus usually spends four days in the Public Service Company workshop and two days in their paint shop. Work starts with removal of back roof section of bus. Steel braces are fitted in the opening to support air conditioning unit. A compact 7-ton Thermo King package unit charged with "Freon-12" is mounted in the rear to provide cooling. The unit is connected to a 23-foot aluminum duct which runs along top of bus. Duct is insulated inside with a one-inch thickness of fiberglass. Seams are sealed with adhesives making entire system water- and air-tight. Converted bus is then ready for painting. All parts of system fabricated at the shop are interchangeable for use on all Public Service Company buses.

How to add air conditioning to a city bus

Addition of 7-ton, Freon*-charged systems to 140 St. Louis buses blueprints economical method for conversion of any bus

To boost summer business on express lines, the Public Service Company, St. Louis, Missouri, recently converted 140 buses to air conditioning. The company engineered the systems and installed them quickly and economically using 7-ton Thermo King package units.

Thermo King units were designed for truck refrigeration, but because they are small, compact and deliver high cooling capacity, they proved ideal for city-bus air conditioning. Converting a bus to air conditioning takes about six days at a cost of approximately $3,000.

Air conditioning helped increase business on Public Service Company's express buses in spite of declining travel on their other lines. Air conditioning systems are charged with "Freon-12" and have provided trouble-free performance.

Bus air conditioning is an example of a profitable market that might be developed in your city. For every market, for every job, be sure the equipment you install is charged with "Freon" refrigerants to help assure safe, trouble-free performance. Specify "Freon"—now in new gold-capped cylinders. Gold identifies the *premium* quality of "Freon" . . . factory-sealed for purity by Du Pont. *E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division 1010, Wilmington 98, Del.*

ABOVE: Four outlets are installed in the ceiling, equally spaced from front to rear. Outlets are baffled to permit distribution of cool air to the coach interior without drafts. A fresh air intake grille is located on roof near the front of the bus.

AT RIGHT: Thermostatically controlled cooling system maintains 70-degree temperature in 40-passenger bus. System is started by driver at beginning of his run, and from then on it works automatically, powered by its own gasoline engine.

FREON® *premium quality* **refrigerants**

DU PONT
REG. U.S. PAT. OFF.

**Freon and combinations of Freon- or F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.*

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

ARI Working To Strengthen Itself In Order To Serve Industry Better

WASHINGTON, D. C.—Steps looking toward further strengthening of the Air-Conditioning & Refrigeration Institute, enabling it to perform more and better-defined services for its manufacturer-members, have been undertaken.

This has been done on the basis of a study of the institute's scope of activity which was considered by the board of directors at a meeting in mid-October at Point Clear, Ala., according to D. V. Petrone, ARI president.

Consideration of many of the recommendations made by the independent consultant who studied the ARI organization was delegated to committees of the board, and further discussion at board level will be held at meetings prior to the annual meeting of ARI at Hot Springs, Va., in May. The first of these board meetings is scheduled to be held Dec. 10.

The consultant's study, made over the past several months, of ARI policies, procedures, and organization, was directed by the institute's Executive Committee.

"Formed in 1953 through a merger of the Refrigeration Equipment Manufacturers Association and the Air-Conditioning & Refrigeration Machinery Association, ARI has spearheaded many of the advances made in the industry in fields such as industry standards, industry promotion, statistics, government cooperation, and other areas of trade association activity," it was stated in the announcement.

Where Do We Go from Here?

(Concluded from Page 1, Col. 5)

trate the market for add-on cooling in the millions of existing homes having central heating.

2. Few contractors have applied imagination to selling of residential heating systems.

3. Central cooling has spurred the demand for central heating in the South.

4. It would be a big help if existing home mortgages could be "opened up" to add the cost of central air conditioning.

Looking a few years into the future, the NEWS also sought opinions on the prospects for the heat pump and supplemental resistance heating.

Some did not comment, but most of the other executives see great things ahead for reverse cycle heating, at least in conjunction with resistance heating.

Undoubtedly, most if not all of the opinions expressed by the executives in these letters are based on facts. But just what are the facts?

Women Want More Facts On Air Conditioning

This issue of the NEWS is loaded with them. For example, some 79 women from all sections of the country who gathered at the National Housing Center in Washington, D. C. in October to give builders their views on what they liked and didn't like about homes, revealed a great thirst for information on residential air conditioning.

Their comments and questions revealed that they were fearful of what it might cost. They apparently had built up mental defenses against air conditioning as a financial threat to other pet furnishings and projects they have their hearts set on.

These defenses could be broken down, they indicated, if they were told more about costs, claimed benefits were proven, and they were informed of how to tell when a home is prepared for air conditioning.

Another example:

Market studies pioneered several years ago by the NEWS to find out exactly what was happening in specific areas have been continued, but on a much broader base to try to get the whole picture of the residential contracting business. The 1958 surveys show not only highly significant data on residential cooling but heating as well, in addition to commercial activities, advertising and promotion, etc.

Wichita, Knoxville Residential Surveys

Residential cooling sales appear to be down in Wichita, but up slightly in Knoxville, compared with 1957. This varies somewhat from contractor to contractor, as might be expected.

Some of the apparently more enterprising contractors either made substantial gains or suffered comparatively little slackening in sales.

Perhaps the most significant fact unearthed in these two cities is that few contractors depend on residential air conditioning and heating sales alone. Their activities in the commercial field, both air conditioning and heating, usually account for a substantial share of their annual dollar volume, the studies show.

"Specialization," however, seems to be the trend in the merchandising of central comfort cooling systems in one of the industry's fastest-growing markets—southern California.

Selling Methods

Investigation by the NEWS into some of the selling methods used by those who are actually getting cooling systems into homes indicated that the greatest success was achieved by those smaller contractors who had become something of "specialists" in the residential field, or by larger contractors who set up special departments or special salesmen to concentrate in this market.

In some instances there is further specialization into the three types of single home dwellings: (1) tract houses; (2) custom-built homes; (3) existing homes.

The heat pump is making big strides in southern California, with possibly 700-800 central type heat pumps sold there in the first 10 months of this year. Practically all of the electric utility promotion on air conditioning in the area is being centered on the heat pump.

Gurney To Speak To Detroit Warm Air Group

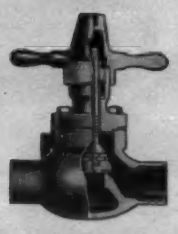
DETROIT—Harry C. Gurney, general sales manager of Janitrol Div., Surface Combustion Corp., will speak on "Selling Quality—The Source of Profit" at a meeting of the Detroit Warm Air Heating Association in the Fort Shelby hotel on Thursday, Nov. 13, at 8 p.m.

"Golden Bantam" Packless Valve—Type 516

A small packless line shut-off valve with ¼" thru ⅝" flare, O.D.S. or extended end solder connections. Also "Blue Bantam" and "Standard" Balanced-Action packless line shut-off valves with ¼" thru ⅝" Fl. and ¼" thru 1⅛" O.D.S. size connections.

Cross-Vu® Hermetic Seal Liquid Indicator—Type LI-16

Brass indicator with glass fused directly to metal body. Maximum working pressure 500 P.S.I. Connection sizes: ¼" thru ⅝" M.Fl., M.Fl. x F.Fl. or with extended ends and solder connections.



Wing Cap Packed Valves—Type 203

The standard of the industry. Bronze alloy with O.D.S. connections in sizes ⅛" thru 4⅛" (Globe) and ⅛" thru 3⅛" (Angle). Also semi-steel with ½" thru 2½" F.P.T. connections and semi-steel flanged type globe and angle valves with brass O.D.S. or steel butt-weld adapters, and one piece socket weld or F.P.T. flanges in a wide range of sizes from 1" to 5⅛".

HENRY *for low installation cost*

Angle Relief Valve—Type 52

UV ASME—NB—National Board Certified

Forged brass automatic pressure relief valve. Pressure setting range 50 to 450 P.S.I. Size connections: (M.P.T. Inlet x Flare Outlet) ¼" x ⅜", ⅜" x ⅜", ⅜" x ½" and ½" x ⅝". Also ⅜" O.D.S. x ⅜" O.D.S.

"DRI-COR" Filter-Drier—Type V800

Ceramic fired desiccant filter-core in bed of granular desiccant—a blend of molecular sieves and activated alumina. Provides high capacity drying even at relatively high temperatures, micronic filtration, efficient acid removal and low pressure drop. Pressure sealed. Wide range of sizes with ¼" thru ⅝" Fl. connections. "DRI-COR" Filter-Drier Cartridges also available for Henry Cartridge Type Angle Driers.

"Y" Strainer—Type 895

Flanged design permits cleaning without removing strainer from line. Screen cylinders securely located by spring tension preventing by-passing of refrigerant. Forged brass end caps with integral end connections. Screen area: 10 thru 150 sq. in. Size connections: ⅜" thru 4⅛" O.D.S. Angle and straight-through type strainers also available.

Write for catalogs describing the complete line.

Catalog 103 Valves, Driers, Strainers and Accessories.

Catalog 202 Ammonia Valves and Accessories.

Catalog FF Forged Carbon Steel Fittings.

HENRY VALVE COMPANY

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AIR CONDITIONING

THE BIG NEWS IN HOUSE & GARDEN MAGAZINE'S 1959 MAY ISSUE

Planned to be one of the most comprehensive series of articles ever published by a consumer magazine, this multi-page section will feature all types of air conditioning . . . plus the latest news in air conditioning and its effect on health, housekeeping and home decorating!

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Big Merchandising Extra! Wide trade distribution is planned for special reprints of this big H&G air conditioning section—utility companies, architects, contractors—plus a special tie-in program for participating advertisers. Build *your* 1959 selling program around these powerful H&G features.

CLOSING DATES FOR MAY 1959 ISSUE:

4-color	March 1, 1959
Black & White	March 5, 1959
2-color	March 5, 1959

*Studies show that the readership of House & Garden magazine duplicates the characteristics of the first people to buy air conditioning.

House & Garden *A Condé Nast Publication*

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NWAHACA Convention To Reveal New Marketing Concept Dec. 4-5

CLEVELAND—The 45th annual convention of the National Warm Air Heating & Air Conditioning Association, to be held in the Statler Hilton hotel here Dec. 4-5, will reveal "a new marketing concept to make every sale a success, be it for the new-home or replacement user," according to F. L. Meyer, association president.

Program for the convention covers practical reports, dramatized skits, talks, and group participation sessions. Emphasis is on "how-to-do-it" information which those attending can take back home and put to use immediately.

On Thursday, Dec. 4, after a welcoming address by Meyer, a preliminary report on the scientific research activities will be presented by those intimately acquainted with the direction and findings of Research Residence No. 4.

Chairman of the Research Advisory Council, Keith T. Davis, manager, Gas Air Conditioning Div., Bryant Mfg. Co., will describe the objectives and purposes of the research activities at the University of Illinois.

He will be followed by Herbert T. Gilkey, technical secretary of the association, who will describe the construction and the instrumentation in the new Air Conditioning Research Residence No. 4.

Completing the first portion of the morning session, which is titled "New Horizons," will be Don R. Bahnfleth, professor, Mechanical Engineering Dept., University of Illinois, and the engineer responsible for the research program. He will present preliminary findings on perimeter summer cooling in tri-level houses.

Two dramatized sessions follow. First is a presentation of the acute need of using the association's manuals as selling tools, entitled "The Missing Element," it was pointed out. This will be followed by "Facing the Facts," a plan for effective selling by using the association's publications, manuals, and other booklets. These two sessions will be presented by the Application Engineering and Marketing Advisory Councils, respectively.

Final portion of the morning program is called "Meeting the Challenge" or "how the Silver Shield program, under conception for five years, offers a direct, responsible, and effective means to solve the marketing problems of 1959."

This session will be presented by the officers of the association: President Meyer; Tom Byrd, first vice president; and F. J. Nunlist, second vice president.

Luncheon speaker will be Lyle C. Harvey, senior vice president of Carrier Corp.

The Thursday afternoon portion of the annual meeting will detail the Silver Shield Program. Speakers will be Randall A. Nelson, James M. Martin, and James D. Nolan of the association staff.

To Emphasize Dealers' Need To Sell

A discussion "spotlighting the important requirement that dealers must sell, and not use advertising and promotion as a crutch," will be covered in a talk entitled "Sales Approach to Silver Shield" by Carl W. Millsom, vice president-sales, Perfection Industries, Div. of Hupp Corp.

How effective teamwork between manufacturers, wholesalers, and utilities will pay-off under the Silver Shield program will be discussed by Harry C. Gurney, general sales manager, Heating & Air Conditioning Div., Surface Combustion Corp.; Peter G. Pfriem, sales manager, The Cincinnati Stamping & Furnace Co.; and Charles H. Burkhardt, national secretary, Distribution Div., Oil Heat Institute of America.

Kalamazoo Dealers To Give Reactions

First portion of the Friday session will be a report on the Silver Shield program in Kalamazoo, which was chosen as the test city before the program is released nationally. Moderator will be Homer F. Brundage, chairman of the Brundage Co., and a member of the board of directors of the association. Appearing with him will be the officers of the Kalamazoo Indoor Climate Bureau.

After a discussion, question and answer period, open to all present, convention attendants will learn how the Silver Shield program measures up in the eyes of authorities in the field of industry-consumer relations. John F. Biggi, manager of the National Wiring Bureau, will describe how the Adequate Wiring Program—a program similar in concept to the Silver Shield program—has succeeded in the electrical industry.

He will be followed by Cason Rucker, vice president, American Institute of Management, and Marshall A. Mott, president of the Cleveland Better Business Bureau. Rucker will evaluate the objectives of the Silver Shield program in the light of the two Warm Air Industry Audits released by his organization while Mott will analyze the concepts of the program out of his experience with consumer problems with their heating purchases.

Homeowner Reaction

Final portion of the Friday morning session will have actual homeowners describing their experience with a Silver Shield installation.

Speaker at the Friday luncheon will be John H. Brinker, vice president of A. O. Smith Corp.

The afternoon "Problem Solving Session" will be presided over by George Boeddener, managing director of NWAHACA.

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This squirrel cage, open frame, integral horsepower Century Electric motor works fine on dozens of applications. You'll find it giving dependable low-cost service on blowers, fans, pumps, lathes, drilling machines and grinders. But . . .

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58-27

Have Little Idea How Much It Costs

Nation's Women Hunger for More Information on Air Conditioning, Are Skeptical of Many Claims

By George M. Hanning

WASHINGTON, D. C. — Listening to four score housewives from 32 states air their hopes, their fears, their plans, and their ignorance of residential air conditioning can be a revealing experience.

Industry representatives attending the 1958 Women's Conference on Housing staged here last month by the National Association of Home Builders and the United Industry Committee for Housing got an earful.

What he heard sent one representative of an air conditioning and heating equipment manufacturer scurrying back to the home office to suggest adjustment of his firm's advertising approach.

In summary, this is the message the women had for the industry.

Many Rank Other Home Features First

We — except those in the south central states — are not convinced that air conditioning the home is necessary or even desirable. There are many other home features we would rather spend our money on.

We are hungry for more information about air conditioning and what it can do for us. We, who do not have air conditioning, are skeptical of your claims for more healthful living, cleaner homes, more comfort. Give us proof.

Before asking us to buy, tell us how much air conditioning will cost us—installed; how much it will cost to operate; and what we should do in our homes to prepare for air conditioning. We fear air conditioning costs will outweigh its benefits.

The women, gathered at the National Housing Center to tell builders what they liked and disliked about today's houses, were divided into small groups of six to 12. As far as practicable, each group represented a distinctive area of the country.

Each group—there were eight of them—gathered around a table headed by a moderator. The moderator posed questions that had been prepared in advance. The women answered these questions. Industry experts hovered about to provide clarification and information to help the women in their decisions—but mostly to hear what they had to say.

25% Had Air Conditioning

Here are some of the major questions on air conditioning that were asked at all tables and what the delegates said:

How many have either partial or complete air conditioning in their present home?

More than 25% had either a central system or one or more room units.

What influenced you to install either partial or complete air conditioning?

Mrs. Walter Bennet, Richmond, Va.: We got it for the baby. The room air conditioner cleared up his prickly heat rash in 24 hours.

Mrs. J. W. Methel, Steubenville, Ohio: It was too sunny in the living room. The unit I bought has enough capacity to cool the living room and my office off the living room, too.

Miss Anita Welch, Lancaster, Pa.: It came with the apartment. It was there when we moved in.

Mrs. L. Y. Stanley, Tulsa, Okla.: Air conditioning is as important to us as heating. I wish every house had it.

Mrs. L. D. Smith, Baton Rouge, La.: It helped to eliminate our mildew problem.

One woman said that the most important thing to her is keeping the air cool and clean. Therefore, her air conditioner and vacuum cleaner were the two most important things in her life.

A delegate from New Eng-

(Continued on next page)

DELEGATES FROM SOUTH CENTRAL states tell moderator that air conditioning is a necessity in their area. Hovering around the group and listening attentively are representatives of manufacturers and the press. At left is Jack S. Robinson, director of Project SMAC. Seated at right is Ralph J. Johnson, director of NAHB's Research Institute.

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QUICK FACTS on GENETRON Super-Dry Refrigerants

- Guaranteed exceptionally low moisture content.
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- Solvent action on oil helps prevent solidification or congealing of lubricant; aids in lubrication of equipment; generally miscible with oil.
- Freely interchangeable and may be mixed in any proportions with comparable fluorinated hydrocarbons meeting the same strict refrigerant specifications.
- Available everywhere, from refrigeration wholesalers throughout the country.

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GENETRON 22 GREEN LABEL $CHClF_2$
Monochlorodifluoromethane

GENETRON 113 PURPLE LABEL $C_2Cl_3F_3$
Trichlorotrifluoroethane

GENETRON 114a BLUE LABEL $C_2Cl_2F_4$
Dichlorotetrafluoroethane

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Woman's Eye View of Air Conditioning

(Continued from preceding page)

land installed an air conditioner because she was jealous of her husband in his air conditioned office.

If you don't have air conditioning in your present home, what have been the reasons you haven't installed it?

Most women from the northern and western regions of the country asserted that air conditioning wasn't necessary.

Others thought it was too expensive to buy and operate.

Mrs. Charles Harkness of Lawrence, Kan. declared that air conditioning was bad because of the forced air. Rather than alleviating her allergies, she contended, air conditioning aggravated them.

Mrs. Jacqueline Meisel of Woodbury, N. J.: There are a lot of other things more important than air conditioning in our area. It might be desirable, but our attic fan takes care of cooling our house. And there are shade trees around.

Women from the Washington, D. C. area, surprisingly, considered air conditioning a luxury. They said they can get along without it, but their husbands want it. There are other things they preferred.

Greatest Benefits

What benefits of an air conditioned home are the most important to you?

Comfort was the overwhelming favorite.

Mrs. Gene Ellis of E. Gary, Ind. didn't care for the ugly bulkiness of room air conditioners, either. "You manufacturers have done such a wonderful job of trimming down the inside portion of the unit, I would think you would do something about the outside."

One midwestern woman said her husband liked air conditioning because it made shaving easier by eliminating excess moisture from the bathroom.

More comfortable cooking, relief from allergies, better sleep, humidity reduction, and more family activity were cited by Pennsylvania-Ohio women.

Mrs. E. C. Kilgore of Hampton, Va., declared that air conditioning kept her curtains crisp. They don't get soggy from moisture.

What do you dislike about air conditioning?

Mrs. Bennet of Richmond: "The roar of the room air conditioner. You have to shout to be heard over it. (To a comment that a room cooler does not make more noise than many other household appliances, she reported) Yes, but the washing machine and vacuum cleaner stop after a while. The room air conditioner goes on and on."

Mrs. Bennet admitted that she liked her air conditioner, but "let's face it. It's ugly."

Mrs. Kilgore agreed and added that it is particularly unattractive on a Colonial house. She commented that operators of a tourist tour of colonial Virginia houses removed one old building from the tour when air conditioning units were installed.

Another woman from the eastern seaboard objected that her storm windows had to be recut to accommodate room air conditioners. That annoyed her.

Mrs. Fyrn C. Donato of Pittsburgh, who admitted she knew very little about air conditioners, asked, "Do you have a machine in every room? If you do I won't have it."

Mrs. O. R. Reynolds of Springfield, Mo. objected that air conditioning kept the house so comfortable that children don't want to go outside in the summer. She felt that they should play outside.

Contrarywise, Mrs. Stanley of Tulsa said she found that children will stay in an air conditioned house only so long and then they want to get out. She wondered whether they had the same tolerance for cooling as adults.

Mrs. Helen Omelianoff of Birmingham, Mich. asserted that she disliked air conditioning because it circulated air through the house all the time and circulating air means dust.

"We keep the filters clean, but there is still dust in the house," she insisted.

Mrs. Walter B. Loeffler of Oklahoma City also wondered about cleanliness claims for air conditioning. "Many others say they get less dust in the house with air conditioning. But I don't find that. My house gets just as dusty. I still have to clean just as often as before."

She also complained of a noisy outside unit. "The neighbors don't complain," she admitted, "but I am sure they are happy when the unit turns off at night. I am sure you can hear it blocks away."

Mrs. Irene Roettger of St. Paul, Minn. objected to poor insulation around the unit that produces drafts when outside weather is chilly.

Mrs. Reynolds came up with another complaint. She has an 11-year-old house with fixed windows. Her air conditioner is inserted in one of these windows. In the fall, she says, condensation will freeze on the inside of the window, frosting up the window. "I don't know what to do about it," she added.

Women from the south central region where gas is cheap and electricity relatively dear felt caught in a dilemna. All but one with air conditioning had an electric unit and muttered about operating costs. They said they would prefer gas air conditioning, but were scared off by the high initial cost.

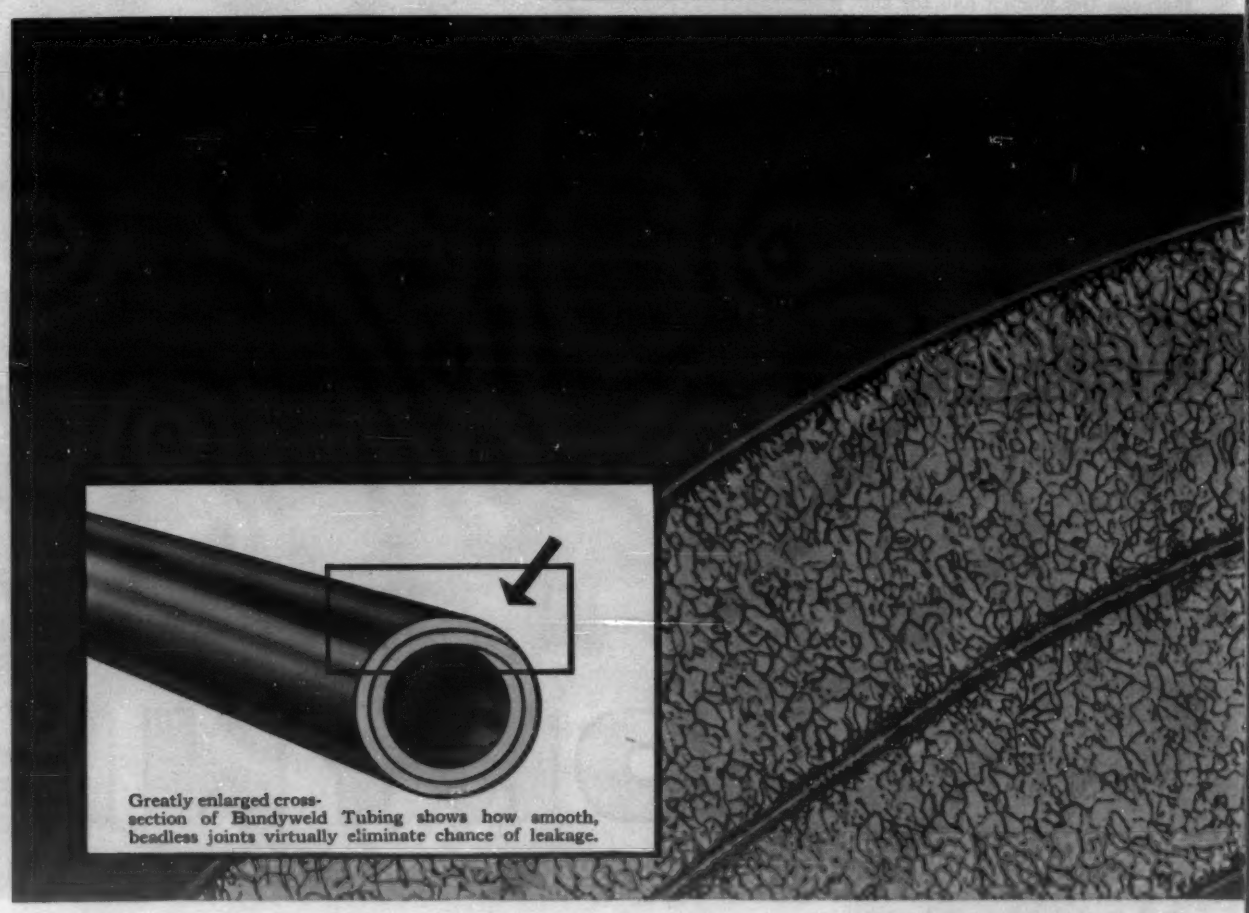
Mrs. Loeffler of Okahoma City said she heard that friends paid $45 to $60 a month for four months to operate their air conditioners. For her, this continuing cost was too steep.

Mrs. Stanley agreed that this was high. "But," she said, "when I talk with people from

(Concluded on next page)

CORNERING A MODERATOR to get notes on comments at tables they were unable to visit personally are Roger Lakey of Lennox Industries, Inc. and Mrs. Dorothy Moore of Carrier Corp., (r.). Moderator is Mrs. John Nicholas of the American Home Economics Association who led several discussions on air conditioning.

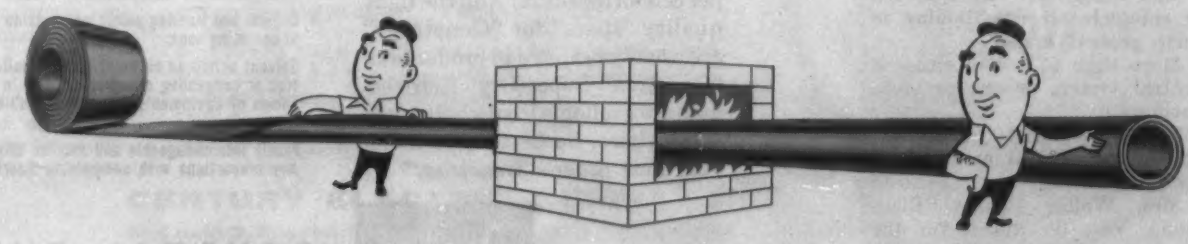
WHY BUNDY LEADS IN MASS-FABRICATION:



Greatly enlarged cross-section of Bundyweld Tubing shows how smooth, beadless joints virtually eliminate chance of leakage.

BEVELED EDGES...Another reason why Bundyweld

And Bundyweld can be mass-fabricated with speed and precision—at minimum unit-cost because of these Bundy advantages:



Bundyweld starts as a single strip of copper-coated steel. Then it's continuously rolled twice around laterally . . .

into a tube of uniform thickness, and passed through a furnace where copper coating fuses with steel.

Result: Bundyweld Tubing—double-walled, beadless, metallurgically bonded through 360° of wall contact.

Few Had Been Asked To Buy Conditioning

(Concluded from preceding page) the north and east, they say they are paying that much for heat. Air conditioning is for us what heat is for them. So, on that basis, maybe the cost is not too much."

Mrs. O. G. Evans of Dallas wished the builders would make windows to fit air conditioners. "We found it was cheaper to install a unit through the wall than in a casement window," she said. But she and her husband objected to installing through the wall. They feared that the hole in the wall would reduce the resale value of the home.

If you have partial air conditioning, why haven't you purchased additional room units to complete the job on your home?

Most delegates from the south central region who considered air conditioning a necessity said they would prefer central air conditioning and did not want to invest too heavily in room air conditioners. They feared that they might not be able to get much on a trade-in.

Others felt they were getting sufficient cooling for their needs.

Have you ever been directly approached to purchase either partial or complete air conditioning for your present home?

At five of eight tables checked by a NEWS reporter, only six women said that they had ever been contacted either in person or by telephone. Out of these 47 women, 18 had purchased units.

Four were approached by an air conditioning dealer, one by a "furnace man," and one by a builder.

Mrs. Edward F. Barrett of Westchester, Ill., whose husband is a salesman, commented: "We live in a 350-home subdivision. When we moved in three years ago, we were told the houses were built ready for air conditioning. To this day we have never had a salesman ask us if we were ready to buy air conditioning.

"Mind you, I don't say I would buy air conditioning. We can get along without it. But I'm not saying that my sales resistance is so strong that on a good hot day I could resist a good sales talk.

"Out of 350 houses, a salesman ought to be able to make some sales.

"Why don't you people get on the ball?"

Mrs. Walter P. Hardee, Jr. of Cockeysville, Md. said she had never been contacted by a salesman. "But don't encourage them to come," she added hastily, "I would say no anyway. Just make the necessary information available. That's all I ask. When I am ready to buy I will go to a dealer I know and get it.

How Much Extra Would You Pay for Cooling?

If you were to build or buy a new home, would you specify that it should be air conditioned? How much additional would you be willing to pay for air conditioning?

Faced with those questions, immediately every woman at the conference wrinkled her brow and asked, "How much will it cost?"

They wanted to know not only how much the equipment cost but how much the installation would cost, how much they have to spend to get the house ready for air conditioning, how much would it cost to operate, how much would combined heating and cooling cost?

Most women south of the Mason-Dixon line indicated they would specify it if they felt they could afford it. Many women north of that line felt the same way if it could be combined with the heating system at little extra cost.

Mrs. Meisel of Woodbury, N. J. answered the question this way, after being advised that she could get a good heating system for $1,400 for a 1,600-sq. ft. single-story house.

"I would pay up to $2,000 for a combined air conditioning and heating system.

"If air conditioning made a difference in the design of the house so I could say to heck with the breezes and place the house to get the best view and get other features I want, I might be willing to pay $1,000 for it. But I would prefer to pay less than $800."

Mrs. Bennet: $800 would be my limit, too.

Mrs. Hardee: If I had an unlimited budget, I would put in air conditioning. But there are so many other things I want.

Miss Welch of Lancaster, Pa.: $500 over cost of heating.

Mrs. Norman White, Youngstown, Ohio: $400 more.

Mrs. Donato of Pittsburgh: $300 more.

Mrs. Frank Ulman, Williamsport, Pa.: $100 more.

Five others from Pennsylvania and Ohio: Nothing.

Some women who wanted radiant heat and were told that they would have to have a completely separate system for air conditioning said they did not want to pick up the tab for two systems.

Have builders in your area impressed you by using air conditioning as a feature in their display homes?

Most were impressed except those from Pennsylvania and Ohio.

What Additional Data Would You Like?

What additional information would you like to have concerning residential air conditioning?

Almost all of the women wanted more information about

Mrs. Reynolds of Springfield, Mo.: "National advertising by air conditioning equipment manufacturers is too general. It's not specific enough.

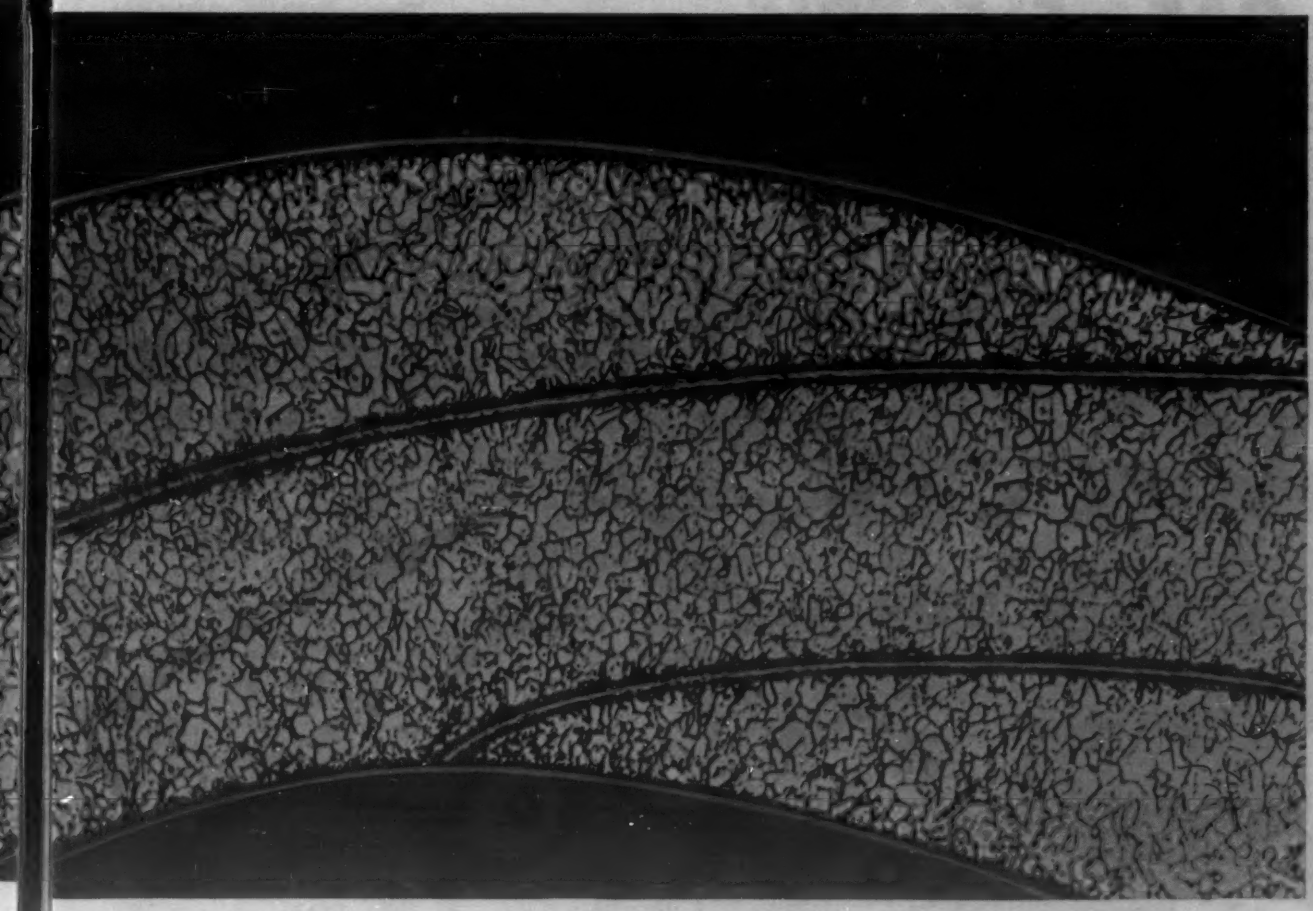
"It would be better if you would tell us what we need, when building a home, to make the home ready for air conditioning. Specifically, I mean. Tell us how we can recognize a home made 'ready for air conditioning.' And tell us why we need air conditioning."

A woman from Pennsylvania said she wanted more information on installation and operating costs.

She was seconded by many from the south central region who also wanted comparative costs of operation between gas and electricity.

A woman from Washington, D. C. said she felt the builder should tell the prospective purchaser how much it will cost to add air conditioning and how FHA terms can be arranged for financing it. Many women, it was brought out did not realize that air conditioning could be financed by FHA or be placed on an open end mortgage.

Opinions differed on whether it would be advisable to add air conditioning to the house mortgage. Some felt that they would be paying too much interest.



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These Bundy-developed beveled edges provide smooth, beadless joints, inside and out; insure full, double-walled strength however the tubing is cut or bent. They're *one* reason why Bundy leads in mass-fabrication; here are three more:

Bundyweld Tubing is double-walled from a *single* strip, copper-brazed through 360° of wall contact to make it leakproof by test. For refrigeration parts from serpentines to capillaries, there's no *real* substitute for Bundyweld. It has become the standard of the industry.

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Check *first* with Bundy! You'll get the best in small-diameter tubing, *plus* the finest design and fabrication services available. Call, write or wire us today!

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What Do Industry Leaders Think Is Ahead for Residential?

Nearly everybody in the field agrees that residential air conditioning is derailed, and that much needs to be done to get it back on the track. There is also a feeling that the industry's thinking about this market needs some "jacking up."

But exactly what is the thinking of key executives?

To help focus attention on various aspects of the problem, the NEWS posed a series of nine questions (see opposite page) and invited comments from industry leaders. Their answers, published on several pages in this issue, are provocative.

Public Still Has To Be Sold on Other Benefits Besides Cooling, Contends Norris of Lennox

Lennox Industries, Inc.
Marshalltown, Iowa

Editor:

Here are my answers to your questionnaire on "Where do we go from here?" in year-round residential air conditioning.

1. Do enough families truly want complete home air conditioning to provide a substantial market, etc.?

No, not yet. The industry has not yet done a good enough job of selling the *multitudinous benefits* of central system year-round air conditioning.

Too many people still think that air conditioning is merely making you cool. We have a big job ahead to sell the many additional benefits. It can be done, however, by cooperative industry merchandising activity, and proper sales training at the retail level.

2. Are present installation practices and costs dampening enthusiasm for the product, etc.?

Yes, I believe that refinement in refrigeration product design, and refinement in installation practices will come so as to drastically reduce the incidence of service problems.

When this happens—and I believe it is not far away—the dealer can be uninhibited in his enthusiasm for his air conditioning product. This is bound to result in a marked increase in sales.

3. Is internecine competitive warfare handicapping industry progress?

No, I do not believe this is much of a factor—except perhaps very indirectly. If all facets of the indoor comfort industry could get together on a combined publicity, advertising, and merchandising program on the BENEFITS of air conditioning as such, it would help this whole industry tremendously.

Competitive warfare might stop all elements of the air conditioning industry from combining in such a promotional effort.

4. Is the promotion and sale of such products as room air conditioners retarding progress, etc.?

No, not at all. As a matter of fact, I feel that the sale of room air conditioners helps the central year-round residential air conditioning business. It whets the user's appetite for summer comfort. His next step up the ladder is logically to a central system.

5. How much progress for heat pumps, etc.?

A great deal. Proper house construction, orientation, and insulation are bringing heat losses down to the point where electric heating is becoming practical, especially where attractive heating rates prevail.

A surplus of power in the winter is growing worse with the on marching summer air conditioning business, so these preferential electric heating rates are becoming more common.

Reverse cycle refrigeration units, and supplemental electric resistance heating are here to stay and are bound to grow rapidly along with the progress in air conditioning.

Tight Houses Demand Mechanical Ventilation

These very tightly constructed and heavily insulated modern houses, incidentally, demand mechanical ventilation for comfort and freedom from odors and staleness.

Once you have installed the air circulating system for ventilation, you can then get more efficient electric heat through reverse cycle refrigeration. This brings the great benefits of summer air conditioning at precious little *extra* cost.

6. Is anyone doing anything to penetrate the old house market?

No, not much yet. It will come, however, when dealers develop greater confidence in the profit possibilities in selling air conditioning, and when more dealers become trained in the art of installing and selling air conditioning.

It is a tremendous market but it takes more dealer know-how to add on air conditioning properly than is frequently required for a new house job.

Therefore, the competent, well-trained, and sales-minded dealer is even more important in the old house market—and can make wonderful profits therein if he knows his business.

Lauds Heating Contractors

7. How and by whom has imagination been applied to selling residential heating systems at the local level?

Perhaps I am prejudiced, but there are a great many high-grade residential heating contractors who have done a very imaginative and high quality job of selling good residential heating systems.

These same heating contractors are doing a similarly imaginative and vigorous merchandising job on residential year-round air conditioning. I am proud to admit that many of these are Lennox Comfort Craftsmen. The whole industry needs many more of them.

8. Has the growth of cooling in the South spurred central heating systems in southern homes?

Yes, I would say a little. As the Southerner looks forward to whole house comfort the year-

(Concluded on next page)

1 ALCO P.O. VALVES—designed and engineered specifically for wide load applications—particularly recommended for refrigeration systems having compressor capacity reduction.

2 ALCO'S PILOT OPERATED THERMO® EXPANSION VALVES give a positive control to 15% of nominal capacity with minimum superheat.

3 ALCO SOLENOID PILOT STOP VALVE insures positive liquid "Shut off".

Use and specify ALCO—the one complete line of REFRIGERANT CONTROLS...engineered for efficient trouble free performance.

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• *BUY QUALITY*
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The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

Norris Contends--

(Concluded from preceding page)

round, it becomes logical to start with a central forced warm air heating system that is ready for the economical addition of cooling later.

I, therefore, think that the growth in interest in air conditioning has made people more conscious of the importance of starting with a good heating system.

9. Would it help to "open up" existing home mortgages, etc.?

Yes, very, very much.

Your survey is an interesting one and I believe you are going to come up with some answers that might give a little direction to the industry. Congratulations!

JOHN W. NORRIS,
President

The Questions

Pinpointing Residential Air Conditioning Problems

1. Do enough families truly want complete home air conditioning to provide a substantial market with real growth possibilities? If not, why not?

2. Are present-day installation practices and costs dampening enthusiasm for the product? If so, how can they be improved?

3. Is internecine competitive warfare between established distribution systems—warm air furnace, plumbing and wet heat, "old line" air conditioning, commercial refrigeration, major appliance outlets—handicapping total progress of the industry?

4. Is the promotion and sale of such products as room air conditioners, dehumidifiers, fans, and electronic filters retarding the progress of the year-round residential air conditioning field?

5. How much progress can we expect in the next five years in the application and sale of reverse cycle units and supplemental resistance heating?

6. Biggest potential, obviously, is that of add-on cooling units for the millions of centrally heated existing homes. Is anyone making more than a feeble or token effort to penetrate this colossal market? Who? Where? How?

7. Central heating systems, like bathrooms and bread, haven't been sold at the local level in the past; they've been bought. Where, how, and by whom, has imagination been applied to SELLING residential heating systems?

8. Has the growth of the market for central comfort cooling systems in the South spurred the equipping of new homes in the South with central heating systems?

9. Would it help if it were possible to "open up" existing home mortgages at low cost and add the cost of the air conditioning system to the mortgage?

Heat Pump Is 'Magic Word' At Gibson

Gibson Refrigerator Co.
Div. of Hupp Corp.
Greenville, Mich.

Editor:

We are pleased to supply the following answers to the question—"Where Do We Go from Here."

1. At this writing "no," but perhaps with a wealth of good advertising and educational programs there will be enough families who will truly want complete home air conditioning. Of course, the room air conditioner is the first step.

2. Present-day installation practices and costs are dampening enthusiasm for the product. Without a doubt the application technique must be simplified.

3. We believe the appliance distributors and dealers should be tagged to merchandise central air conditioning units up to 10 tons. Over that size, it becomes an engineering classification type distribution pattern.

4. Again we feel that room air conditioners, dehumidifiers, fans, and electronic filters are stepping stones towards year-round residential air conditioning.

5. We are all guessing, but we believe that the volume of reverse cycle units and supplemental electric resistance heating will surprise all of us.

A good example is the job which is being done in 1958 in the Los Angeles area. One appliance distributor alone sold more than one thousand heat pumps. Next year they are budgeting for the sale of 2,500 to 3,000 central heat pumps.

6. Industry as a whole has not merchandised adequately the advantage of adding central cooling to existing central heating systems. An effort has been made, but the results are negligible.

7. From where we sit we believe that the heat pump is the magic word.

8. Yes.

9. Yes.

W. C. CONLEY,
Vice President
In Charge of Gibson Sales

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Inadequate Servicing of Faulty Units Serious Problem—Mueller Climatrol

Mueller Climatrol
2005 W. Oklahoma Ave.
Milwaukee 1, Wis.

Editor:

We will give you our opinion on the various questions posed in the same order as outlined in your correspondence.

1. In some areas of the country, particularly the extreme south and southwest we feel that complete home air conditioning is now desired to the extent to provide a substantial market. However, this is not the case in the midwest nor the east.

Certainly weather has been a contributing factor to the lack of desire on the part of homeowners to purchase air conditioning the last two years. Summer discomfort in many areas has not been sufficient to warrant the expense of summer air conditioning for "cooling" alone.

The other benefits of air conditioning such as humidity and cleanliness have not been sold to the extent that they become a valid reason for purchase.

Costs Haven't Hurt

2. We don't believe that costs have dampened the enthusiasm for air conditioning. But present day installation practices have not contributed to enthusiasm, and in our opinion have had the reverse effect.

Certainly service of the air conditioning equipment should be considered in the same category with installation practices. Inadequate servicing of faulty units as well as inadequate original installation has been a serious problem.

This is not the fault alone of the installing dealer but is a shortcoming at all levels of distribution—manufacturer, wholesaler, and dealer.

More adequate installation and service information, better qualified personnel, and better recognition of and interest in this problem are necessary to assure that a satisfied homeowner customer will serve as a future salesman for air conditioning, rather than an unhappy deterrent to future sales in a given neighborhood.

Competition Is Healthy

3. We feel that competition between the various established types of distribution outlets and different types of manufacturers is healthy for the industry insofar as we are all trying to create interest in a product and develop a market.

Competition between these various factors does however become a handicap to the progress of the industry when this competition manifests itself solely in the area of price.

Equipment or installations that are sold at unsatisfactory profit levels can only aggravate the problem of poor installation and service practices.

4. We don't feel that the promotion and sale of products such as room air conditioners, dehumidifiers and electronic filters retard the progress of year-round residential air conditioning, but further serve to stimulate an interest on the part of the buying public in home climate conditioning.

5. It is our thinking that the application and sale of reverse cycle units and supplemental electrical heating will be a greatly increasing factor in the next five-year period.

6. To the best of our knowledge no one is making a concentrated effort to penetrate the old house market, except on a local basis.

7. Your seventh question is rather broad and rather difficult to answer in terms of the specifics called for. There is no question but that a lot of heating equipment has been and continues to be bought, rather than sold.

It is equally true that many advertising and promotional plans have been initiated by furnace manufacturers and used by local dealers to promote both new house and replacement heating business.

Newspaper mats, direct mail pieces, radio and TV scripts, and other such material has been available through our company as well as many others.

8. Weather, continued movement of people from the North accustomed to central heating, general consciousness of greater indoor comfort in addition to central cooling systems have in our opinion all contributed towards a greater use of central warm air heating in the South.

9. Yes, we feel that "opening up" of existing home mortgages for air conditioning is desirable, and if properly promoted on a local level would be a definite help in selling summer air conditioning equipment in the replacement market.

GEORGE HASE,
Manager-Sales Engineering

Enough Families Want Complete Home System, Believes Fraser & Johnston

Fraser & Johnston Co.
1900 17th St.
San Francisco 3, Calif.

Editor:

1. Yes, there are enough families who want complete home air conditioning to provide a substantial market. But it will take some sales effort.

2. Better field men could improve present day installation practices.

3. I don't think we are all trying to accomplish the same thing.

4. I don't know if promotion and sale of room air conditioners, dehumidifiers, fans, and electronic filters are retarding the progress of year-round residential air conditioning.

5. Reverse cycle units and electric resistance heating will progress by evolution, not revolution.

6. The add-on market is not being penetrated because no specialty salesmen are attacking it.

7. God only knows who has been applying imagination to the selling of residential heating systems.

8. Yes, central comfort cooling has spurred the equipping of new homes in the South with central heating systems.

9. Yes, it would help to add the cost of air conditioning to the home mortgage.

I. S. FAIRBANKS,
Sales Manager,
Air Conditioning Div.

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People Don't Know Difference Between Good and Bad Systems—Westinghouse

Westinghouse Electric Corp.
Editor:

I agree with your memorandum of Sept. 19. Residential air conditioning is derailed for the time being, and much needs to be done to get it back on the track. It would be easy to jack it up if we could find some place to set the jack.

There are more than enough families who want complete air conditioning to provide a substantial market with real growth possibilities. However, they don't want it bad enough to go out and force us to sell it to them, or even take the initiative.

Westinghouse proved this past year that air conditioning can be sold to homeowners. In a city in which we had sold virtually no residential air conditioning the previous year, we sold more than 100 units by house to house canvassing.

The big obstacle, which you could predict, was the difficulty in getting the customer to pay for being sold.

In this respect it is like an automobile. Each person when given a price immediately feels compelled to shop for the best possible price from several other dealers. With automobiles they are relatively sophisticated buyers and they can balance price against value. But with apologies to Gertrude Stein an air conditioner is an air conditioner, is an air conditioner.

Not only do customers fail to know the difference between good and bad equipment, but they are unable to distinguish between good and bad installations, and between adequate and inadequate applications.

As a result of this it is almost as difficult to get compensated for specialty selling of air conditioning, as it is to get compensated for specialty selling of automobiles.

Distribution Handicap?

In my opinion the competitive warfare between different established distribution systems is not handicapping the progress of the industry. But the failure of the industry to mature enough to develop a well defined pattern or dominant channel of distribution may be a handicap.

This is completely understandable however since, up until this time, the total market for purely residential air conditioning has been so small in most places that it was not capable of supporting its own distribution system at reasonable costs.

As a consequence they have ridden piggy-back or been a sideline of the distribution systems for furnaces, plumbing, wet heat commercial refrigeration, commercial air conditioning, or major appliances.

I have my own philosophy and forecast about the final result of this "integration process." Before the process is complete I am sure that school is going to be out in several places. But I would like to predict that the distribution system of some of the other fields we have mentioned will adapt themselves to the necessities of air conditioning application and service rather than the other way around.

When residential air conditioning begins to be the breadwinner of the family, instead of a dependent child, you will see a number of changes taking place.

In my opinion the promotion and sale of room air conditioners is greatly helping the progress of year-round residential air conditioning. Room air conditioners are introducing many people to the fact that air conditioning is possible in the home.

In most cases I believe it is just a question of time before the home with more than one room air conditioner decides that it really costs no more to travel first-class.

Room Unit Disadvantages

As you well know, room air conditioners for whole-house air conditioning have a serious disadvantage in terms of noise and air distribution, and total equipment cost for equivalent tonnage.

But if they are installed through the wall, and combined with electric resistance heating eliminating all ductwork, they can be the least expensive installation for air conditioning.

The thing that makes this possible on a broad-scale is the growth you can anticipate in the use of electric resistance heating. The room air conditioner installed through the wall, with supplemental resistance heat, is going to be the principal contender for the low cost housing market.

I am sure you are familiar with the predictions I have made consistently that heat pumps and resistance heat will represent more than half of the new heating installations in American residences in less than 10 years.

I think you know the reasons for this. Electricity is becoming less and less expensive compared with all other fuels.

The principal obstacle now is the long-standing concept that resistance heat is just too expensive. It is still more expensive in most places, but there are not very many places where it is too expensive in a well insulated house.

Future of Heat Pump

I would like to make the prediction that electric air conditioning and resistance heating will be the two basic prime methods of conditioning the air in the American home in the not too distant future.

Heat pumps will be quite popular but they will quite properly be considered primarily as economizers to reduce the current consumption that would result from the exclusive use of resistance heat.

The big problem concerning residential air conditioning, particularly in existing homes, is the fact that it is primarily a field manufacturing operation. More than half the cost of a typical residential installation in an existing home is in the cost of the installation, not the cost of the equipment.

Traditionally, contractors have not been very good merchandisers. The burning question which no one has satisfactorily answered appears to be "how can we teach, persuade, or enable the contractor to become a hard-sell merchant?"

B. D. HENDERSON,
Vice President

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Feature super-sealing with triple diaphragm construction. Linemaster regular (non Backseating) and Linemaster Special (Backseating) are available in two-way, three-way, straight through and angle, plus hand expansion and purge types in all popular end connections.
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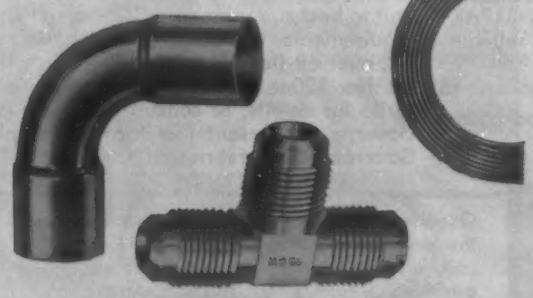

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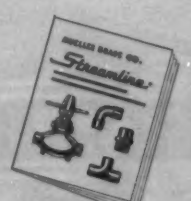

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Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

tem is eaten up by the installation. This results too often in botched up jobs and bitched up prices.

2. Too few dealers or contractors make any imaginative attempt to *originate* sales. There are outstanding exceptions—especially in Indianapolis, Memphis, St. Louis, Miami, Phoenix, and Chicago. Their success proves that residential air conditioning *can be sold.*

3. Too few dealers and contractors, period. Our industry needs growth, distributionwise. (And how are you today, Howard Hallas?)

4. Insufficient credit terms. Mortgages should be opened up so that payments could extend five, or even 20 years. You can buy a swimming pool or a boat or a "package kitchen" on long terms. Why not air conditioning? *It will extend the useful life of a house, and cut maintenance costs.* Hence, air conditioning is good insurance for a home mortgage.

5. Nobody, but nobody, in the industry is doing an adequate job of selling the *cleanliness angle* of home air conditioning. This is the feature *users* appreciate most, and are most surprised by after they experience its benefits.

6. Poor service. Too many manufacturers neglect—or can't afford—to train servicemen in factory sponsored schools. There are a few outstanding exceptions, of course. But, by and large, service charges are exorbitant, repair work unsatisfactory in many areas.

As a result, bitter word-of-mouth complaints by users have given this business a collective black eye.

7. Unrealistic advertising. Dealers and contractors argue that much consumer advertising *oversells,* that it invokes magic —thus evoking and provoking dissatisfied buyers.

Best Is Yet to Come

Many hopeful things appear on the horizon. These can be cited especially:

1. Sharply increased sales of room air conditioners *to homes* in 1957 and 1958, despite "unseasonably cool" Junes and Julys, augur well for the future. Although *total* room air conditioner sales have been disappointing, sales to homeowners have gone UP astoundingly. Even basic furnace manufacturers are encouraged by this trend. They regard the window unit as an "educational device."

2. Factory-subsidized sales drives in "test areas," which employed doorbell-ringing specialty salesmen, panned out wonderfully last August. Results have encouraged manufacturers to believe that sales resistance to residential air conditioning has been overestimated. Their remaining problem: *persuading contractor-dealers that specialty selling effort can be profitable.*

3. Electric utilities are getting behind the heat pump, and gas utilities are promoting gas air conditioning, *at long last.* Utility people are masterful promoters. And their money talks beautifully.

4. In a few scattered areas, mortgage lenders and even FHA personnel are awakening to the fact that air conditioning, like wall insulation and fireproof roofing, adds sufficient values to *make long-term home loans more secure.* When this trend snowballs, as it may, residential air conditioning will boom and zoom.

5. New design "break throughs" are on the drawing boards and in the works. Manufacturing heads of organizations in our industry aren't dummies. They are well aware of the fact that too much "manufacturing" is done in the field and on the spot. They've spurred their engineering departments into working overtime to remedy this situation. Exciting news is coming from product design areas.

6. More and more "complete home modernization specialists" are emerging. These organizations sell air conditioning, integrated kitchens, modernized plumbing, etc., and provide satisfactory *service,* too. They comprise our industry's brightest hopes for future progress.

7. Some long-range weather prognosticators predict a renewal of hot, humid, stifling summer weather in 1959-60. This eventuation (if it happens) could be the clincher.

"Gentlemen, faites votre jeux," as they say in the Monte Carlo casino. In unfancy English, you can place your bets on a vigorous revival of the residential air conditioning business. It's in the cards.

Candid Advice

One of the shrewdest and best informed men in the residential air conditioning industry (he's the sales manager of a leading warm-air heating concern) gave out with some sound thoughts in an interview last week.

But he prefers to remain anonymous. Herewith, his reactions (paraphrased by "Dope"). Consider these to be "indirect" quotations.

Many families do not truly want complete air conditioning at the present time, because there are many other items they would place higher on a list of "wants."

Many women today are still not excited about air conditioning. They visualize home air conditioning as being cold, noisy, etc.—as in movie theaters.

The idea of completely closing all doors and windows, and keeping a house buttoned up for 24 hours, also freezes women.

Present day installation practices and costs are extremely competitive. Too much so. Prices, if anything, should increase. The average around the country is about $400 a ton installed, with 50% of the do-

(Concluded on next page)

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AGA Sees Experimental 'Sun Valley Remote' Conditioner with Water for Refrigerant

ATLANTIC CITY, N. J.—An engineering model of a versatile, new gas air conditioning unit was shown by Arkla Air Conditioning Corp. at the annual convention of the American Gas Association here.

In its development stage the new unit has become known as the "remote," because it can be installed outside the home, and as the "add-on" because it is being designed to provide gas-fired cooling in homes already equipped with central heating systems, the firm explained.

Both as "remote" and as "add-on" the new unit is a long-awaited development in the gas appliance field, according to Arkla. It would join the family of "Sun Valley All-Year" gas air conditioners manufactured by Arkla.

The new air conditioner will consist of a unit similar in appearance to the present Sun Valleys. In addition to a range of capacities suitable for homes, Arkla plans to design the new unit in sizes for commercial and industrial applications.

EXPERIMENTAL 'Sun Valley Remote' gas air conditioner is now being tested by Arkla Air Conditioning Corp.

An outstanding feature of the new unit, the company said, is that it should be under no restrictions because of local codes. It would use ordinary tap water as a refrigerant and a common salt solution as its absorbent, and operates at sub-atmospheric pressures at all times. For example, the company declared, if a leak should develop in the unit's system, nothing would leak out—only air would flow in.

"Scheduled for production in a limited number of test models by late spring of 1959, the 'remote' will essentially be a gas-fired, water-cooled absorption unit similar in general operation to the present Sun Valley, with an additional secondary circuit for delivering cold or hot water, depending on which is needed, to the point where required," it was noted. "In this respect, the remote unit can be convertible to heating simply by reversing its cycle.

"A special type of evaporative cooler built into the unit will achieve the same function as a remote cooling tower."

Arkla engineers say that the remote will have the advantage of the features of air cooling, but will require no drive mechanism.

Operating costs of the new unit have not been determined, but Arkla engineers say such costs should be approximately equal to the corresponding Sun Valley models 500 and 750. Pricing of the new unit will make it competitive with comparable equipment, it was said.

Arkla plans initially to produce and test units with 3 tons of cooling capacity and 96,000 B.t.u. of heating output. It also is developing direct-fired intermediate units of up to 25 tons.

Worthington Hosts Classes Of Garden State RSES

EAST ORANGE, N. J.—Service training department facilities of Worthington Corp. here again have been made available to the Garden State chapter, Refrigeration Service Engineers Society, for the 25-week RSES study courses.

Terms 1 and 2 of the course are held Mondays from 7:30 to 10:30 p.m. Term 3 classes meet Tuesdays at the same hours.

Instructors for Term 1 are Walter Smith and Dr. F. E. Medon, both with Technical Service Dept., General Chemical Div., Allied Chemical Corp.

Walter Stopera, U. S. Navy, is the instructor for Term 2.

Under the coordination of Kamil J. Faris, Term 3 instructors include George Luce, Frank Hawco, and Lloyd Larkin.

All the instructors are members of the chapter.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from preceding page)

mestic installations being 3-ton or smaller units.

It appears that the warm air furnace and sheet men are doing much of the domestic work, such as it is. Commercial air conditioning mainly is sold by the commercial refrigeration dealer.

Plumbers and appliance stores have gone in for the attic type units on the domestic level, but generally must sublet the duct-work and sheet metal work. They lack engineering and service know-how.

Room air conditioners eventually may sell central cooling to the homeowner who has enjoyed a pleasant experience of air conditioning in one or two rooms. Maybe we furnace manufacturers should get into the window-unit business. At least, it has volume.

There are thousands of applications more suitable for room air conditioning than for a central system.

The reverse cycle unit also helps us. I believe you will see electric heating taking an annual volume of 100,000 homes or more a year real soon.

History to date shows that the bulk of central cooling has been sold in the new house market. Add-on units generally involve substantial change in the duct system, new controls, and in most cases require additional electric power.

Many of the older homes are not properly insulated. The interior location of registers, such as low wall outlets and floor return airs, actually create an inordinately expensive installation.

What this industry needs is a major break-through in product design.

THINK YOU HAVE FLOW PROBLEMS?

What about the craftsmen who built the great pyramid for the Egyptian Pharaoh, Cheops, and fashioned copper into pipe to convey water to the royal bathing pool? Above is a remnant of this pipe—buried for centuries—that was found some time ago, still in excellent condition. Now, 5400 years later, modern science, technology and engineering have made remarkable progress in solving flow problems of copper tubing. Especially at Kensico. We scientifically *clean*, *deburr*, and *Flow Test* all Restrictor Tube to customers' exact specifications. Why not let us help solve *your* flow problems? Write Kensico today, Dept. ACN-7, for free copy of our new 16-page, illustrated booklet, "The Story of Kensico Tube."

All Kensico's plug-drawn Restrictor Tube undergoes rigorous Flow Test. It is then cut to size, *plastic-capped*, and shipped in wooden cases.

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'Our Greatest Competition Comes from Automobiles, Appliances'--Perfection

Perfection Industries
1135 Ivanhoe Rd.
Cleveland 10, Ohio

Editor:

We definitely think there is a future in the residential year-round air conditioning market. Again this year we have increased our product line and will again expand our merchandising efforts so that we will definitely be a factor in this future growth.

I feel that at the present time, although we still have some troubles to be straightened out within our own industry, that our greatest competition comes from the automotive industry or other appliance fields in the big fight to get the consumer's dollar.

Except in a very few cases, we are not in a position either as a manufacturer, distributor, or installer to financially compete with people such as the automotive industry for the advertising time and space which is needed to impress the general public with the need and desire for our product and its advantages.

Enough Do Want It

1. Yes, I believe there are enough families that truly want and truly need complete home air conditioning to provide this growth in our industry.

2. Yes, in some areas some installation practices and costs are decidedly curbing the enthusiasm for our products. It would be unfair to make a blanket statement that all installation practices were hurting our business.

However, with some installers and contractors there seems to be a lack of sense of responsibility toward the public in regard to making sure that their customers not only get a good installation with proper distribution, etc., but also get equipment which has been manufactured by a reputable firm whose background is in the home comfort field and distributes its products through legitimate distribution channels.

No Cost Improvement Seen Possible

Present day costs with the present type of equipment cannot be improved considerably without cheapening the equipment. We have found that too low cost equipment causes skepticism among prospects and where low cost equipment with inferior installations are present, it has definitely dampened enthusiasm for our product and its advantages.

3. I think internecine competitive warfare has only handicapped our total progress of the industry where unqualified personnel have attempted to make installations of equipment.

Actually we have found that major appliance outlets, because of their ability and enthusiasm for merchandising, would make good outlets if they had the personnel to engineer and install and service the equipment.

4. To a certain extent, yes. However, this would have to be qualified as geographical areas of the country.

In certain areas the individual appliance may be all the prospective customer needs to fulfill his desires. However, it might be interesting to note that central air conditioning is the only method of taking care of all four of these features; that is, cooling, dehumidifying, air movement, and filtering.

5. We can expect tremendous progress in the next five years in the application and sales of reverse cycle and supplemental electric heating units.

Our own company, of course, has made much progress in this type of unit in the last few years. We expect to make more progress in the next few.

Of course, from the sale of this type of equipment we can expect much cooperation and assistance from the electrical utility companies who are interested in winter load.

6. Unfortunately there are many areas where poor installation practices and inexpensive heating equipment have hurt the possibility of add-on cooling units.

Here again the installer has bowed to the wishes of the general contractor and installed barely adequate heating systems and therefore in many cases totally inadequate cooling systems.

There are scattered dealers who have taken advantage of their own experience in the heating business and their own installations to penetrate and actually gather a large percentage of this business to themselves.

Unfortunately, there are too few of them and it does not seem to be as a result of an effort by any particular manufacturer or association.

7. Residential heating systems have been *sold* throughout the country wherever there are enterprising, imaginative, merchandising retailers who have shown a real interest in the public's welfare, and in selling the consumer something more than just a heating system, but actual year-round home comfort.

Direct Approch Best

This has been done by merchandising campaigns—most of it personal, which involves canvassing by personal experienced salesmen. Direct mail and local newspaper advertising have been successful but we have found our most successful dealers have gone to the most direct approach.

All the credit should not go to the dealers, however, since without the cooperation of a very few heating manufacturers who are actually offering year-round comfort and methods to obtain this year-round comfort, the dealers would be selling the installations and another furnace.

8. Yes, to some degree I feel that the desire for better winter heating as well as future summer cooling, has been responsible for the increase in central heating systems in the South.

9. Yes, opening up home mortgages definitely would help to open up the public's mind to accepting air conditioning. Although FHA helped us the beginning of this year by their recognition of air conditioning in some areas, it still meant more effort and more paper work.

As a matter of fact, inclusion of an air conditioning system in the mortgage would do much to increase the future sale of year-round comfort systems.

W. H. SMITH,
Manager, Cooling Sales

The LENNOX® perfected

The secret is in the simplicity and soundness of the controls

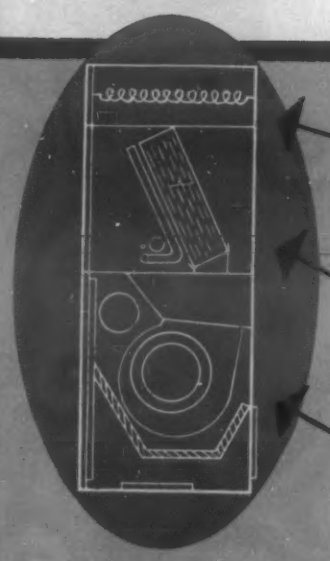
Take the defrost control, for example. It's positive and foolproof—operates on temperature differential instead of complicated air switches or timing devices. It incorporates a positive simple source for sensing frost and for turning the heat pump back on when frost has been eliminated.

The simple and exclusive Lennox "sequencer" control for the resistance strip heaters positively paces the starts of each 4 or 6 kw strip. "Sequencer" prevents simultaneous electric load caused by compressor and heat strip starting at the same time.

The compressor is not just a standard unit with reversing valves. Compressor as well as both indoor and outdoor coils are of *special design for heat pump work*. Your assurance of longest practical compressor life and minimum service problems.

These are a few of the features that enable Lennox to produce the highest C.O.P.*—higher than any other prominent make on the market!

* *Coefficient of Performance: heat output per input watt.*



BOOSTER HEATING SECTION
For extra heating capacity in colder areas. Series of 4 or 6 kw "strips"—tailored to installation requirement—controlled by exclusive "sequencer."

INDOOR COIL SECTION
Maximum heat transfer capacity produces more heating as well as excellent cooling and dehumidification.

BLOWER-FILTER SECTION
Quietest blower in the industry ... combined with exclusive hammock filter. Automatic 2-speed motor control available where needed. More air volume delivered with reduced horsepower.

ALSO AVAILABLE IN DOWN-FLOW AND HORIZONTAL FLOW MODELS

Specialty Selling Needed to Offset Apathy, Cool Summers—Janitrol

Janitrol Div.
Surface Combustion Corp.
Columbus 16, Ohio

Editor:

There are two primary reasons for the sales lethargy of residential cooling and year-round conditioning. These are: 1) the consumer isn't sold, and 2) the consumer isn't being sold.

Although most people accept and, in fact, demand cooling for commercial and industrial occupancy, very few show any desire to have it in their homes.

Most Seem Neutral

Most people seem to be neutral on the subject and a few have definite objections. With a sound program of consumer education I'm sure that the objections can be eliminated and neutrality converted to desire.

In addition to consumer apathy, we have just experienced two years of abnormally cool summers and as a consequence, have not realized the usual number of impulse purchases generated by extended hot spells.

The sales job, which is essentially a job of consumer education, as mentioned above, must be accomplished at the retail level.

This calls for specialized direct selling, using the methods previously used in the introduction of other new consumer products like refrigerators, vacuum cleaners, conversion burners, and so forth.

Fortunately, the consumer is financially able to buy. He trades in his automobile with 75% of its useful life remaining, and frequently buys a second car at the same time.

He remodels his kitchen for several thousand dollars, just to obtain a new color scheme and restyled appliances. He's buying extra TV sets, extra radios, foreign vacations, and enjoying other luxuries with transient benefits.

'A Terrific Bargain'

Our industry is offering him through year-round air conditioning better health, a cleaner home, happier living for the entire family, and so forth, for many, many years . . . certainly a terrific bargain for anyone!

But our industry isn't getting this story through to the consumer.

We are simply being outsold in this competitive race for the consumer's dollar.

HARRY GURNEY

4 Major Factors Must Be Balanced To Expand Residential Market—Moroh

National-U.S. Radiator Corp.
Heating & Air Conditioning Div.
Johnstown, Pa.

Editor:

The year-round comfort conditioning of indoor America is inevitable. Heating in winter and cooling in summer will be as commonplace as central heating is today, but when will this year-round air conditioning of RESIDENTIAL structures be with us?

In many locations, year-round indoor comfort in some types of buildings is considered essential; and the absence of cooling is considered below-standard.

In warm metropolitan areas, new commercial structures must be centrally heated and cooled or they are obsolete before they are built. Year-round comfort conditioning is so essential to rental space that older buildings in these areas must be modernized to keep pace with the new structures, which are completely comfort-conditioned.

Comfort-conditioning in the new construction and modernization market will increase continually, and it is becoming as basically essential as electricity, plumbing, and heating are considered now.

When will this requirement for year-round comfort-conditioning become an important factor in the residential field, as it is now in the commercial field?

Most Important Factors

There are various factors which will influence the market penetration of year-round residential comfort conditioning. Most important:

1. The equipment must be efficient, attractive, simple to install, and trouble-free.
2. Installation and operation must be reasonably priced.
3. Competent installation and servicing facilities must be readily available.
4. Homeowners must be sold on the desirability of year-round comfort conditioning.

All these factors—and others also—must move forward and develop consistently with each other. The size and penetration into the market will be determined by how favorably all these factors move ahead in balance.

For example, if the equipment is efficient, attractive, simple to install and trouble-free (Factor #1 is favorable); but the installation is very high-priced, and competent installers are not available (Factors #2 and #3 are unfavorable), then the market is limited.

Or, if the equipment is of high quality, and competent installation and service is available (Factors #1 and #3 are favorable); but price is too high (Factor #2 unfavorable), then the market is limited.

If merchandising is highly organized and homeowners create a huge demand for equipment (Factor #4 is favorable); but price is high and competent installation and service is limited (Factors #2 and #3 unfavorable), then the demand can't be filled.

All Must Balance

The market will be large and increase in size only when all influencing factors are in balance and continually improve to favor an expanding market.

In residential comfort conditioning we have not yet reached a favorable balance, so our market is limited. It will remain limited until those who control the influencing factors force them into favorable balance.

Manufacturers must strive to produce quality equipment at low cost. Installing contractors must build competent installation and servicing organizations.

SIGMOND MOROH,
Manager,
Air Conditioning & Warm Air Section

HEAT PUMP

Another LENNOX "first" ... in ruggedness and efficiency

NEW FROM THE SOUND UP!

LENNOX heat pumps are the result of years of research. There was no attempt to market it until the problems were eliminated which had been inherent in heat pumps before.

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Marshalltown, Iowa

Without obligation, let me have the complete facts about the Lennox heat pump.

Company.....
Address.....
City.....State.....
My Name.....

Contractors Have To Learn To Sell Values Instead of Cutting Prices

Typhoon Air Conditioning Co.
Div. of Hupp Corp.
505 Carroll St.
Brooklyn 15, N. Y.

Editor:

1. The obvious answer is no. The reason is . . . an an industry, we have done a poor job in selling the American public on demanding air conditioning. Up to now, most of the advertising and sales effort have gone into the promotion of "product" and "price," taking for granted that the potential buyer was a prospect and not just a suspect.

Until such time as the industry bands together to promote residential air conditioning and gets it into the class of a demand item versus a fringe luxury, the market potential will be a dream of the future instead of a tomorrow's reality.

2. Present day installation practices are dampening the enthusiasm for the product. Installing contractors have got to become more conscientious on installation practices and learn how to sell true values instead of competing on "cutting of corners" methods of reducing selling prices.

3. Yes, caused by the fact that the installing contractor, regardless of the segment of industry that he originates from, is not completely conversant with *all* the factors that go to make up his true cost and the required reserves for contingencies to give the buyer a satisfactory installation and himself a well-deserved profit.

4. No. On the contrary, any of these items serve to stimulate the desire for complete home air conditioning.

5. South of the Mason-Dixon line and west of the Rockies, the progress of the reverse cycle may approach a geometric progression versus an arithmetic progression in the remaining geography of the United States. This is based on continued technological improvements but, more important, the aggressive support given by the local utility companies.

6. On a national basis, my answer would be no. However, every now and then we find in a local market a really aggressive dealer who, by utilizing many time-tested and proven "specialty selling" approaches, is cutting a fat slice of his particular market.

7. My answer here would parallel the answer to No. 6. I cannot at the moment give you specific names, but if same were required, I feel certain that we could obtain some from NWAHACA.

8. Yes.

9. At this stage of the game I doubt if this would give much of an impetus to accelerating home air conditioning sales. Usually the buyer has to want a product before terms of purchase are of much interest to him. To my knowledge, we have had open-end mortgages on certain existing homes, but I don't know of too many sales that have been consummated via this route.

DON V. PETRONE,
President

Installation Practices Haven't Helped, But Some Companies Don't Seem To Care

Editor's Note: For fairly obvious reasons, the writer of the following letter prefers to have neither his company nor himself identified. Both are important enough, however, that his thoughts are worthy of full consideration.

Editor:

(1) Certainly there are enough families who want complete home air conditioning to provide a substantial market with real growth possibilities.

(2) I believe present day installation practices have more to do with dampening the enthusiasm for the product than costs; however, cost is always a factor. The improvement in cost can come primarily through volume, whereas improvement in installation practice is a problem of proper selection of dealers and training, which will take time. However, there are some companies in the business who are neither doing a selective job on their outlets nor are they spending the necessary time and money on training.

(3) There is no doubt that the struggle between established distribution systems is handicapping the progress of the industry and it is in this struggle that some of the installation practices mentioned above really get to be a "thing of beauty."

(4) I do not believe the promotion and sale of the products outlined here are retarding the progress of the year-round field.

(5) The progress made in the next five years in the reverse cycle and resistance heating will depend in a major sense on the attitude of the electric utilities relative to rate structure. If the economics stand up, progress will be good; if the economics are not favorable, progress will be slow.

(6) This question covers too broad an area and requires more definition than is given in order to answer. I'll pass.

More Imagination Today

(7) I believe more imagination is being applied to the sale of residential heating today than ever before in the history of the business since I have been connected with it—and that goes back twenty-five years. I think the next few years will see substantial improvement in this particular phase of the problem.

(8) The answer here is specifically "yes."

(9) The answer is "yes" but in my opinion it is not a major item as yet; however, I do believe that within the next three years it will become a major factor.

There is only one other phase of the business which I would like to comment on and this has to do with the quality of the product that is being offered and it is my belief that the retarding influence of poor quality products is a major factor in the over-all problem you are concerned about. Actually, this particular subject ties in, in some respect, to Question (2) and (3).

XYZ

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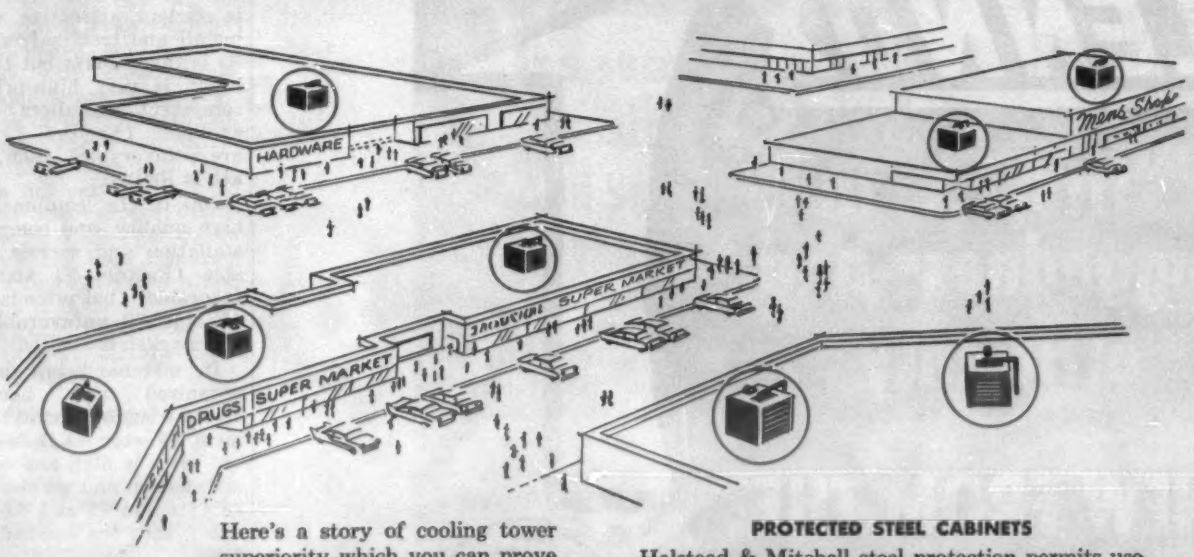

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PROTECTED STEEL CABINETS

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Crane: Can Improve Installations

Crane Co.
836 S. Michigan Ave.
Chicago 5, Ill.

Editor:

1. Yes, enough families want complete home air conditioning to provide a substantial market with real growth possibilities.

2. Present day installation practices can be improved by better design with no compromise to either heating or cooling cycle.

3. No, competitive warfare between types of distribution systems has not handicapped the progress of the industry.

4. No, the sale of related products such as room air conditioners, dehumidifiers, fans, and electronic filters has not retarded the progress of year-round air conditioning.

5. Progress in the application and sale of reverse cycle units and electric resistance heating during the next five years depends on electric load costs and the ability of the contractor to design and install.

6. No one, to my knowledge, is making more than a token effort to penetrate the "add-on" cooling market.

7. No one is applying imagination to the selling of residential heating systems, either.

8. Yes, central cooling has spurred the equipping of new homes in the South with central heating systems.

9. Adding the air conditioning system to the home mortgage would help in the South and Southwest where cooling demand is equal to or greater than heating demand. It would not help in cooler climates.

E. P. ALLEN,
Assistant Manager,
Merchandising
Heating Products

How Frigidaire Views Problems

Frigidaire
Dayton 1, Ohio

Editor:

Fred Lehman, Harry Ward, and I have discussed your questionnaire of Sept. 19 at some considerable length. Knowing that a mere recital of generalities about the business is of little specific value to you, we have decided that in all honesty we have little to offer beyond the answers I know you are anticipating.

In answer to the matter of present-day installation practices and costs, we are endeavoring to emphasize self-contained, easily installed equipment, with as much assembly as possible done at the factory. This, we feel, reduces costs and problems, and the Trans-Wall unit is an excellent example of a move in this direction.

All of us here are aware of what you are trying to do to get the business "back on the track," George, and are appreciative of your efforts. I only wish we could come up with more specific answers or something startling to help you.

C. CARLTON BRECHLER

The Questions

Pinpointing Residential Air Conditioning Problems

1. Do enough families truly want complete home air conditioning to provide a substantial market with real growth possibilities? If not, why not?

2. Are present-day installation practices and costs dampening enthusiasm for the product? If so, how can they be improved?

3. Is internecine competitive warfare between established distribution systems—warm air furnace, plumbing and wet heat, "old line" air conditioning, commercial refrigeration, major appliance outlets—handicapping total progress of the industry?

4. Is the promotion and sale of such products as room air conditioners, dehumidifiers, fans, and electronic filters retarding the progress of the year-round residential air conditioning field?

5. How much progress can we expect in the next five years in the application and sale of reverse cycle units and supplemental resistance heating?

6. Biggest potential, obviously, is that of add-on cooling units for the millions of centrally heated existing homes. Is anyone making more than a feeble or token effort to penetrate this colossal market? Who? Where? How?

7. Central heating systems, like bathrooms and bread, haven't been sold at the local level in the past; they've been bought. Where, how, and by whom, has imagination been applied to SELLING residential heating systems?

8. Has the growth of the market for central comfort cooling systems in the South spurred the equipping of new homes in the South with central heating systems?

9. Would it help if it were possible to "open up" existing home mortgages at low cost and add the cost of the air conditioning system to the mortgage?

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For evaporative condensers, air handling units and heavier heating equipment, Utility has created AM-pak, an entirely new design priced for high production, combining efficiency with flexibility, strength with perfect dynamic balance. Ranging in diameters from 10 to 36 inches, the rugged blower wheel has 64 specially curved blades, features a conical center disc construction and operates at static pressures up to 6¾" W.G. You deliver greater air-power with less horse-power when your equipment is built with AM-pak.

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*Air Moving Package.

They'll Do It Every Time

by Jimmy Hatlo

YEAH, JOE--IF YOU TURN ME DOWN, IT'S CURTAINS! IF I DON'T HAVE A HUNNERT BUCKS, I SLEEP IN THE PARK TONIGHT. YOU'RE MY LAST HOPE....
I DIDN'T KNOW THINGS WERE THAT BAD, VASCO--OF COURSE I'LL HELP YOU OUT....
JOE PHALLGUY BELIEVED PAL VASCO'S TALE OF WOE--TO THE TUNE OF A HARD-EARNED HUNDRED---
LATER THAT EVENTIDE, DEBTOR AND BENEFACTOR MEET, AND YOU'D THINK VASCO WAS THE SOLVENT ONE AND JOE WAS THE MOOCH--
THANX AND A TIP OF THE HATLO HAT TO E. PURVIS, 101 ATWATER, LOS ANGELES, CALIF.
WELL, WELL--HELLO, JOE--WHAT ARE YOU DOING HERE?
JIMMY HATLO
9-25
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Pride of Possession PLUS Pride of Occupation Should Boost Home Air Conditioning

(Concluded from page 1)

conditioning moves glacially, while automotive air conditioning defies all the laws of gravity in our industry.

Car cooling is purchased by men—to whom automobiles are expressions of personality and prestige. Also, COMFORT is a top desire in the male world. (An illusionary vision of "the little woman" bringing him pipe and slippers after a home-cooked dinner pushes plenty of bachelors into matrimony.)

What can our industry do to overcome indifference of housewives to residential air conditioning? Obviously, previous advertising and promotion approaches aren't working. Has a modern-day Lord Kelvin "thought of a better way" to get this job done? Could be. Said savior probably is a psychologist.

Motivation Research (a species of commercial psychology) may seem mysterious —even charlatan-like—to many practical, hard-bitten businessmen. It's an area of learning they can't afford—or see no reason —to explore themselves. Furthermore, its implications and revelations might disturb their own preconceived notions (or those of claquing cliques). Possibly that's why entrenched operators generally view this new-fangled MR with ill-concealed alarm.

Bigger-minded executives, however, might find it useful (even if annoying) to study previously confidential results of an expensive Motivation Research survey conducted recently in our arena.

"Interviews in depth" amongst residential air conditioning *possessors* (MR research subsidized by a giant corporation in this business) have revealed the *honest real reasons* why people bought air conditioning for their homes.

Quickly and briefly, here are the findings of this costly MR survey.

What are the REAL reasons for installing residential air conditioning?

Comfort? No—although owners appreciate it profoundly after a year or two of experience.

Health? They hope so, but aren't convinced.

Cleanliness? Not a good selling point initially. Must be seen and reported by the user or even by the hired "cleaning woman" to be believed.

Property Values Enhanced? Not yet, except in the Southwest.

Pride of Possession, it turns out, is the Real Reason why most people invest in residential air conditioning.

To be sure, it DOES protect an entire family's health. It DOES enhance property values, and DOES make Father more comfortable at home while making Mother's cleaning (or her maid's) job easier.

That *"Air Conditioning Is Good for You"* theme, however, doesn't inspire a buying urge on the part of women. The inner, unspoken appeal which *really* gets them is Pride of Possession.

"Yass", a wife can brag to minked rivals at a luncheon, "we've air conditioned our home." (In a steaming golf club locker room her husband gains stature by dropping the same remark.)

From a woman's viewpoint:

At a cocktail party in an air conditioned home, the *prestige* advantages of residential air conditioning become apparent. Heat, humidity, and foul air reach such a peak at crowded social gatherings that conversational topics often revolve around surprisingly salubrious "indoor weather."

Keeping up with the Joneses may be an American social malady in the minds of philosophers. Nevertheless it is the cue and clue to American business prosperity.

The automobile industry bases its business on *velocity of turnover* and styled obsolescence (annual new models make owners of good old cars feel out-of-date and, somehow unfashionable).

To men, ownership of new model autos becomes a symbol of masculinity. If the Motivation Researchers are to be acknowledged, ownership of residential air conditioning also should become a newer, more potent Badge of Success for both *men* (who love comfort) and *women* (who are proud of their homes).

In this instance, air conditioning advertisers and salesmen might well be advised to equate *sales* with *prestige.* Furthermore, air conditioning manufacturers could be advised to tune in on the same wavelength when addressing contractors and dealers in their trade advertising.

Air conditioning dealers and contractors, in general, don't have a Pride of Occupation —yet. But they should.

Both in their own minds, and in those of their customers, air conditioning should represent The Image of Success.

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'The Conscience of the Industry'

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"If you think the editor sometimes makes a mistake in what he gives you to read, you ought to see the mass of stuff from which he saves you."—*Karl A. Bickel,* former president of the United Press.

HOW CAN SERVICE FIRM HAVE SO MANY 'CALL BACKS'?

Ted Heath Refrigeration
Vinton, Iowa

Editor:

As I do the office work—handling calls and it's for my husband—I fully realize what "call backs" cost.

In reading your "Doing Time with a Serviceman" in the 9/15/58 issue—invited many call backs—in counting them I found there to be 7 call backs or intention to call back and 1 ph call back. Any service department knows what call backs cost. We couldn't stand them—too costly—and besides we would have to hire another man.

After reading your article—I checked the records and found in one eleven week period, my husband had two call backs. How can a service company make any money with a lot of call backs. We would go broke. I am certainly not finding fault, just being curious.

ELDA HEATH

'SNAP-ON' IS OUR TRADE NAME—GUSTIN-BACON

Gustin-Bacon Mfg. Co.
Kansas City, Mo.

Editor:

I noticed in your Sept. 15 issue a publicity release concerned with a "snap on" type of insulation. The wording both of the headline and the copy would indicate that the words "snap on" were being used as a product name.

I feel it necessary to remind you that G-B has a product, the registered trade name of which is Snap-On. I am sure that no intentional plagiarizing of our product was intended.

R. C. LANG

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Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only $6.00 per year, 53 issues (U.S. and Canada). Foreign: $10 per year.

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'No One In The Industry Has Come Up With Any Real Answers,' Says G-E

General Electric Co.
Air Conditioning Dept.
Tyler, Texas

Editor:

It is apparent that no one in the industry has come up with any real answers for if he had the rest of us would have followed along (in the absence of good plans of our own) and industry volume wouldn't be so pitifully short of past predictions.

In the order in which you posed the questions, here are some comments.

1. Let me answer your first question, whether there are enough families who want air conditioning to provide a real market, by asking a question—Can you name one consumer durable that has attained success in this country at high volume and at a profit, strictly on its own, without being aggressively sold?

Not A Replacement

Almost every consumer durable now on the market was a development to replace something already in existence. Modern gas and electric ranges replaced the coal stove—vacuum cleaners are extensions of the broom, but air conditioning is new.

Our industry has not sold the benefits. It has only made feeble attempts to justify the price to the consumer who decided on his own that air conditioning might be a worthwhile purchase. The desire exists, but the market is not there merely for the taking, it must be created.

2. Sub-standard installations and equipment have cost contractors and manufacturers large sums of money but as yet have not had a serious effect on sales volume.

That the impact on sales is not greater is due largely to the fact that the buying public doesn't have a basis on which to judge the performance of an air conditioning installation and for the time being settles for poor jobs.

Price Over-emphasized

As for the dampening effect of costs on enthusiasm for the product, there is a strong tendency to over-emphasize the price angle. Any reduction in end user total cost will, of course, broaden the market, but the industry's most pressing problem is one of selling the value of the benefits it offers today at today's costs.

3. Internecine competition is not a handicap to the industry. The offering of more kinds of equipment through varied types of distribution outlets increases the total sales effort. The only danger lies in the encouragement this added competition gives toward sub-standard installations.

4. The promotion and sale of accessory and fringe items falls in a similar category to 3 above. Every consumer who experiences any of the advantages of even partial air conditioning becomes a prospect for a complete year-round system.

5. Reverse cycle and supplemental resistance heating will make real progress in the near future. The greatest strides will be in the warmer areas.

The type, size, and total impact of the promotional efforts of the gas and electric utilities will have direct bearing on the degree of progress made by the heat pump.

6. The industry is not making anything like a sufficient effort in "add-on" cooling. From a profitability point of view this is the most desirable area but it is also the most difficult in which to develop a concrete working plan of action for approaching the market. It's here that creative selling and merchandising aimed at finding and developing leads and prospects is most necessary.

7. This imaginative creative selling has been confined generally to individual progressive merchandising dealers, and there are far too few of them. Many dealers and most manufacturers are carried away by the "numbers racket" and have devoted a disproportionate amount of effort to project selling.

8. Central air conditioning in the South has had direct and important effects on the installation of central heating. Many houses in all but the very lowest cost bracket are stated as "being ready for future air conditioning" merely by the inclusion of central heating during construction.

It is unfortunate, but true, that these heating systems are too often of minimum size for the heating requirements and are consequently too small for the later addition of even passable air conditioning.

9. About five years ago one of the "shelter" magazines promoted the use of open-end mortgages as a vehicle to assist the sale of residential air conditioning. A great deal of intelligent and planned effort was devoted to the program but results were disappointing.

Certainly opening this avenue for more convenient use would help but it will be a slow process because of legal difficulties and costs in many areas.

The recent decision by FHA to encourage inclusion of year-round air conditioning in mortgage valuations will help since holders of existing mortgages now have an established precedent.

Volumes could be written around your specific questions, but, with your permission, I'd like to tell you briefly what the Air Conditioning Dept. of General Electric is going to market with, starting now.

Our new long-range marketing program is aimed at helping to solve some of the industry's problems (and our own) through implementation of two words that you and many others have used often—Customer Satisfaction.

Ingredients of Program

The five essential ingredients of such a program are: Product, Application, Installation, Service, Selling. This is the point at which some of your readers will give up in disgust and turn the page, but I caution them that cynicism can be carried too far. The dog eat dog philosophy hasn't done anything for the industry to date.

We are being neither naive nor altruistic. The air conditioning industry as presently constituted, cannot continue indefinitely in its chaotic, unprofitable condition, and we propose to do something about it.

L. H. HIRSCHBACH,
Manager, Sales and
Distribution Planning

HERE'S WHY YOU SHOULD

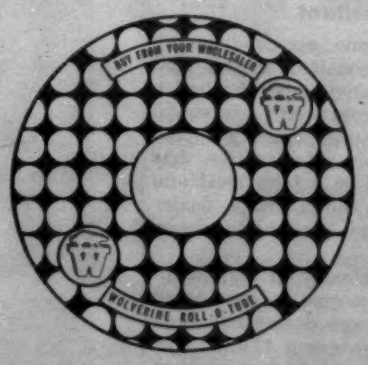
SELL

WOLVERINE

TUBE

You're right, Mr. Wholesaler. If we are telling you *"what"* you should sell then we should be just as willing to tell you *"why"*. Illustrated and described right, are the products Wolverine Tube manufactures for you to sell to your customers. We're listing some pretty potent sales points. Won't you look them over . . . and keep them in mind next time you order?

See Wolverine's exhibit at the 14th International Heating and Air Conditioning Exposition, Philadelphia, Pa., January 26-29.



1 **WOLVERINE ROLL-O-TUBE**

Wolverine Roll-O-Tube® is the industry's most modern and functional tubing carton. Your customers can roll it like a hoop, carry it by its convenient center hole, use it as a work saving reel and leave unused tube in the sturdy carton protected against damage and dirt until needed again. Your customers will appreciate these features when you explain them . . . will keep coming back for more.

2 **WHOLESALER SUPPORT**

Every carton of Wolverine Roll-O-Tube and every Wolverine advertisement to your customers carries this slogan "BUY FROM YOUR WHOLESALER". It's dynamic proof of Wolverine's belief in the American wholesaler—the kind of proof that helps strengthen your position.

3 **NEW END SEAL**

In addition to its high quality, Wolverine copper refrigeration tube also offers your customers a new kind of tube seal—a plastic plug that can be used over and over, that gives positive protection against water and dirt and which, because its O.D. is the same as the tube, permits the tube to be easily threaded through partitions, etc.

And there you have them—three solid reasons why it will pay you to sell Wolverine products.

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Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

Installing Dealer Will Have To Be Sold On Necessity Before He Can Sell Public

Thermo-Products, Inc.
North Judson, Ind.

Editor:

We have given your specific questions serious thought and do not believe that the questions may be answered individually. We do feel that the points brought out by these questions do bear considerable discussion.

It is our firm belief that air conditioning has not been sold to the buying public. Actually, the installing dealer has merely acted as an order taker and waited for the consumer to sell himself.

It is our further belief that the dealer has not aggressively sold air conditioning for a number of reasons.

Average Dealer Very Hesitant

Number one, air conditioning has been installed in the past by those individuals who had a good refrigeration background and as a consequence, air conditioning or refrigeration has been placed on a high level and one which the average dealer has been very hesitant to undertake.

The complexity of air conditioning as normally considered by the average dealer has been a very frightening thing. This leads the dealer to believe that he is entering into a field which is beyond his ability.

The result has been that the average heating dealer has been perfectly willing to sit back and let the refrigeration man skim off the cream and install the equipment himself.

With the introduction of precharged equipment on the market, the gates have been opened to those dealers who are willing to gamble on air conditioning installations since very little special training was required to make such installations.

However, we still have your smaller dealers who are very reluctant to make these new simple installations. This small dealer looks to the future and sees a possibility of service coming up. Since he has no training and apparently is unwilling to take such training, he is very reluctant to take a chance on installing any air conditioning equipment whatsoever.

Certain Manufacturers Have Overcome Problem

We believe that some of these objectives have been overcome by certain manufacturers using finely defined and outlined instruction manuals relative to service and using cause and effect type service tables. This still has failed to sell the greater part of the potential market.

It appears to us that before air conditioning can be sold to the buying public as a necessity, rather than a luxury item, it is first going to be necessary for the manufacturer, or for the refrigeration field itself to sell the installing dealer.

To do so, it will be necessary to take the complexity out of the unit and show the installing dealer that air conditioning is no more difficult for him to handle today, than oil gun burners were 15 years ago when the average heating dealer knew nothing whatsoever about this new complex mechanism which was to take the place of coal-fired installations.

It is our belief that it is going to require a period of time to properly educate the buying public, as well as the installing dealer.

In the past, air conditioning has been considered a luxury item, and only those in the higher income brackets could afford such an installation. We believe that the automotive industry has done much to promote air conditioning to the average individual as a necessity, rather than a luxury item.

I am sure we both agree that there are many people driving air conditioned automobiles today, who have 105° houses to come home to. However, the automotive industry has made the buying public air conditioning conscious to that extent.

In conclusion, it appears that our air conditioning industry has many problems to overcome before air conditioning will become a large market factor. An extensive program of promoting air conditioning on the ultimate consumer level must be undertaken and a schooling program certainly must be initiated in order to convince the dealer that air conditioning installations may be handled just as easily as any winter air conditioning system.

In regard to electric resistance heating and reverse cycle units, we have definite ideas regarding this type of heating system. First of all, we do not believe that reverse cycle units, as we presently know them, are the answer to heating today. They are entirely too complex and require a considerable amount of care to maintain. While there may be no lack of qualified servicemen to handle this job, it still places a burden on the homeowner regarding the cost and maintenance, etc.

Supplemental electric resistance heating may be one answer to the electric heating industry. However, we do not believe that resistance heating as it is being

(Concluded on next page)

Resistance Heating Problems--

(Concluded from preceding page)

installed today is the ultimate answer by any means.

We are specifically referring to electric resistance which is being installed in the ceilings of homes today, since basically electric heat lacks almost all of the basic qualifications for air conditioning.

Air conditioning as normally defined, is the process of treating air so as to control simultaneously the temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space.

If we analyze resistance heating as we normally accept it now, what points of air conditioning have we attained? Temperature, yes—the temperature can be controlled by the normal room thermostat for each room or for the entire house.

Humidity, no — humidity is one of the bigger problems of resistance heating today. In fact, it is probably the most difficult problem that those promoting resistance heating have to contend with.

Cleanliness, yes and no—of course, there is no dirt problem with resistance heating, but at the same time, you are not controlling the cleanliness within the control zone itself, inasmuch as there is no way to rid the control zone of infiltrated dirt.

Distribution, again yes and no —distribution may be classified in resistance heating as the proper amount of heat within a room; however, it is not being distributed and returned, it is merely a stagnant proposition.

We believe that the ultimate in electric heating will lay in some form of a system whereby it is possible to use the same system to air condition, humidify or dehumidify, and certainly clean the air through some filtering system, as well as distribute it and have air motion.

Electric heating will still have to fall in the same classification as hot water heating regarding air motion itself until it is modified and improved.

It is certainly possible on either system to build up a point of stagnation in a residence whereby no air is moving whatsoever and unless the exhaust fans are used, and the home takes advantage of infiltration of air, there will be a definite stagnation point which will cause discomfort to the people.

In addition, of course, as well as infiltration and air movement, it will be necessary to have ex-filtration in order to overcome some of the serious humidity problems that have been found in electric heating systems of today.

'Open End' Mortgages Would Assist Sales

Year-round air conditioning is considered a high priced semi-luxury item by most of the buying public. We do believe that "open end" mortgages would assist in selling the public.

The buying public today is very much instalment buying conscious and if a year-round air conditioning system could be installed in their home, the total cost being added to their mortgage, I am quite certain that an entire new market could be opened up.

It is certainly easier to sell a person a $3,000 installation on the basis of $3 a month, than it is to sell them the same system on the basis of three years to pay.

We believe that our field has been very lax in the promotion of its products. If we analyze the entire heating and air conditioning market, I am sure we will find that we have all been acting as order takers and certainly there has been virtually no one agressively promoting the necessity of central heating and air conditioning as much as it should have been promoted.

Now, probably more than any other period since the end of World War II, the public is getting more tight with its money and we are fast reaching the point where the homeowner is going to be harder to sell.

Homeowners More Discriminate Now

The homeowners are more discriminate than they have been for many years, and are unwilling to put their money anywhere except perhaps in the bank, unless they can be shown that the item you are atempting to sell is a necessity and a must to them.

The only way we can get to them is with a hard, fast sales program which introduces to them perhaps for the first time, the real necessity of comfort living.

HUBERT M. PUGH,
Chief Engineer

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Full Choice of Unit Sizes to meet your needs. UCON Refrigerants will be available in 10, 25, 145 lb., or ton cylinders; truck-tank or tank-car quantities.

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America's newest fluorocarbon plant will bring you a UCON Refrigerant for your air conditioning and refrigeration application. And there are new, exciting developments, soon to come. For full data write UCON Refrigerants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, New York.

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These 5 UCON Brand Refrigerants will meet your refrigeration and air conditioning needs

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UCON Refrigerant 12 Dichlorodifluoromethane
UCON Refrigerant 22 Monochlorodifluoromethane
UCON Refrigerant 113 Trichlorotrifluoroethane
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The Questions

Pinpointing Residential Air Conditioning Problems

1. Do enough families truly want complete home air conditioning to provide a substantial market with real growth possibilities? If not, why not?

2. Are present-day installation practices and costs dampening enthusiasm for the product? If so, how can they be improved?

3. Is internecine competitive warfare between established distribution systems—warm air furnace, plumbing and wet heat, "old line" air conditioning, commercial refrigeration, major appliance outlets—handicapping total progress of the industry?

4. Is the promotion and sale of such products as room air conditioners, dehumidifiers, fans, and electronic filters retarding the progress of the year-round residential air conditioning field?

5. How much progress can we expect in the next five years in the application and sale of reverse cycle units and supplemental resistance heating?

6. Biggest potential, obviously, is that of add-on cooling units for the millions of centrally heated existing homes. Is anyone making more than a feeble or token effort to penetrate this colossal market? Who? Where? How?

7. Central heating systems, like bathrooms and bread, haven't been sold at the local level in the past; they've been bought. Where, how, and by whom, has imagination been applied to SELLING residential heating systems?

8. Has the growth of the market for central comfort cooling systems in the South spurred the equipping of new homes in the South with central heating systems?

9. Would it help if it were possible to "open up" existing home mortgages at low cost and add the cost of the air conditioning system to the mortgage?

Reduced Publicity Has Slackened Public's Interest

Day & Night Mfg. Co.
855 Anaheim-Puente Rd.
La Puente, Calif.

Editor:

In my opinion, there has been some slackening of interest on the part of the average homeowner with regard to the purchase of complete air conditioning.

The primary reason for this change, so it seems to me, is the lessening of publicity appearing in various publications on this subject during the past 24 months. This has undoubtedly been abetted by a certain consideration for austerity resulting from our recent recession.

Our industry would do well to embark individually or collectively on a program designed to rekindle the present embers of consumer interest.

'No Very Good Answer'

There is little doubt that the high cost of installation is dampening the interest of the older "existing house" air conditioner prospect. We have been thinking about the problem but as yet have no very good answer.

As far as we are concerned, the greatest obstacle to the sale of air conditioning is the lack of dealers who have the combination of creative sales ability and mechanical competence necessary to do this job. We are convinced that a good market exists for those who have the capabilities for cashing in on it.

Although we see evidence of great interest in the heat pump, we also are concerned that failure on the part of inexperienced dealers to properly sell and engineer these installations will create many unhappy customers.

We agree with you that the add-on cooling market in centrally heated existing homes represents a tremendous potential. In some markets we have succeeded fairly well in tapping this potential.

In our opinion, it's going to take a lot more of planning, training, and advertising before the yield comes up to expectations.

Industry Lags Far Behind

There is little doubt that interest in air conditioning has substantially increased the percentage of southern homes being equipped with forced air heating. Due to a lack of aggressive selling, our industry, however, lags far behind in realizing the attendant opportunity potential.

One of the greatest potentials for sales expansion lies in the area of opening up existing home mortgages. If, by working together, the various industries or trade groups could bring about the establishment of a simplified, universally acceptable procedure for opening these existing mortgages, all factors in the home modernization industry could achieve an era of prosperity we hardly dare dream about.

A. J. Horn,
Sales Manager,
Heating & Air Conditioning

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One "peep" on the United electronic scope signals the slightest flaw or variance within specifications.

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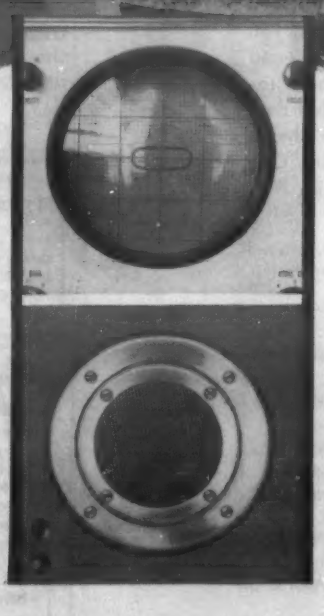

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Specify **UNITED** *for aluminum, brass, copper tube and wire...brazing alloys*

How Absorption Unit Manufacturer Views Present Status of Market

Arkla Air Conditioning Corp.
Shannon Bldg., 812 Main St.
Little Rock, Ark.

Editor:

We will answer your questions in the order presented on your questionnaire, but without repeating them.

1. Not at the present time. Our industry is woefully short in selling the benefits of our products and creating the necessary motivation to buy air conditioning in competition with all of the other products available in the market place.

In short, a substantial market with real growth possibilities does not exist at present, because we have not *sold* the benefits of air conditioning.

2. Cost and installation practices will always influence our market. However, we believe that these influences are minor compared to the sales approach and effort placed in merchandising product.

Public Is 'Confused', Postpones Action

3. There are evidences that the general public is "confused" in regard to the best system to buy. This type of confusion, gained from sales promotion and advertising effort, invites a prospective purchaser to postpone action.

In general, however, we believe that the greatest problem involved in this competitive warfare is that which lowers price on the product to the point where "hard selling techniques" are ignored.

4. We believe that the sale of these items adds to the progress of year-round residential air conditioning. We feel that the installation of a window unit is the first logical step in selling a family on year-round air conditioning. That is, the customer becomes accustomed to being cool but becomes aggravated at the lack of ventilation and complete comfort. After a few years with a window unit, we feel that the customer wants to upgrade his comfort and is a natural prospect for year-round air conditioning.

Heat Pump vs. Gas Depends on Research

5. In regard to electric reverse cycle equipment, only the research laboratories can provide our answer. Present design equipment is threatening the development of this market due to operational and maintenance problems. New and more capable design are required to capture this market and "overselling" of present designs greatly endangers its future.

The greatest progress and development of new markets in the reverse cycle, or single heating-cooling coil equipment will be accomplished by the gas operated absorption units.

With over 10,000 now in operation and with a serious customer complaint ratio of less than one third of 1%, the initial market development stage of these units is accomplished.

Sold in conjunction with mass merchandising techniques for the first time in 1958, these single coil gas absorption units will consume approximately 5% of the total residential and small commercial central system heating-cooling market. 1959 should see this percentage of total market approach 15%.

New 1959 gas absorption models and designs should greatly improve these percentages in future years. Of great importance in this regard are the new Arkla Sun Valley remote units which will broaden the line of available capacities and will afford the advantages of hot water-chilled water systems.

These can be used for "add on" applications to existing furnaces, central coil forced air year-round systems, or "wet heat"-chilled water individual convector installations. Volume availability will commence in mid 1959.

6. No comment.

7. No comment.

8. Certainly, the South has been spurred on in the equipping of new homes with central heating systems. There are many factors which attribute to this and the growth of the central comfort cooling market in one of these. We do not feel that central comfort cooling has been the predominating influence in this regard.

9. It would help, very definitely, if it were possible to "open up" existing home mortgages at low cost for the inclusion of central air conditioning systems. This type of easy finance plan would be of great importance to our entire industry.

W. G. WEPFER,
Sales Manager

Airtemp Sees Sales Doubling In 5 Years Despite Industry's 'Shortcomings'

Airtemp Div., Chrysler Corp.
Dayton 1, Ohio

Editor:

I am glad that you have given me an opportunity to express my opinions as to the future of residential air conditioning.

We at Airtemp are extremely enthusiastic. In spite of the many shortcomings of manufacturers, distributors, and dealers, it is our firm belief that the residential air conditioning business will double within five years.

The industry at the dealer level as well as other levels is undergoing the growing pains associated with a growing industry.

The "Bidders" are trying to stay in business against the selling merchandisers and quite frankly, it looks tough to us for the bidder. There is a great future for the merchandising residential dealer, but he has to sell because he has to part the American public from the dollars that they might have intended spending on other things for the home than air conditioning.

The rate of growth of the residential air conditioning industry depends upon the ability of the industry to develop merchandising dealers who have the desire, the will, and the know-how to convince the American public that home air conditioning is something that they cannot do without.

J. B. OGDEN,
Vice President of Sales

from Strainer to Outlet... ...from Element to Seal Cap...

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FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE
Write Directly to the Company—*at the Address Given in the News Item*

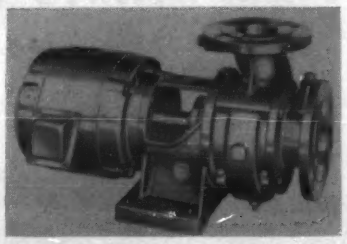
Pump Line Claims Many Innovations

A new line of standardized single-stage centrifugal pumps—the Taco LP series—was unveiled by Taco Heaters, Inc., Dept. AC&RN, 1160 Cranston St., Cranston 9, R. I.

The line boasts "many pump innovations highlighted by the fact that Taco is the first manufacturer in the United States to take advantage of preferred number standardization," the company claims. "Preferred numbers adopted by ASA as early as 1936 re-affirmed again in 1946 are used to indicate, in a standardized manner, linear dimensions and other pump characteristics."

Other announced features of the line are relatively few sizes, broad range of performance, high efficiencies, interchangeability of parts, stuffing box or mechanical seals, rugged construction, and extra quiet motor.

Component part designs of the



Taco LP Pumps are said to offer other advantages.

"One of these is the essential feature of the casings (or volute) design," it was stated. "By simply rotating the casing around the shaft center, the pump discharge can be placed in any position. Another feature is that the casings on the Taco LP's are all of the 'centerline discharge' type. These casings, due to their centerline discharge, are self-ventilating, as long as they are installed in the normal position: discharge up."

Boost Capacity, Range Of Tube Cutter

Increased size range, faster cutting, and great versatility reportedly have been built into the new model "Hi-Duty 274-FA" tube cutter introduced by The Imperial Brass Mfg. Co., Dept. ACRN, 6300 W. Howard St., Chicago 48.

Capacity of the device has been increased so that it will handle ⅛ in. to 1⅛ in. o.d. tubing, hard or soft temper, and a larger cutting wheel is provided which results in faster cutting. This also minimizes burr in cutting hard temper tubing.

A retractable reamer, flare cut-off groove permitting cut-off of damaged flares without tubing waste are other features.

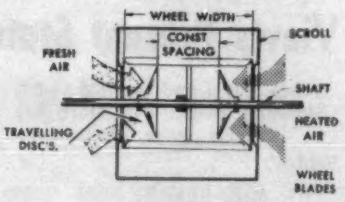
'Praetorian' Unit Ventilators Use New Principle

"Praetorian" unit ventilators, in two sizes, with three coil arrangements each, for heating or heating and cooling with a large range of capacities, are now in production for use in schools, offices, and commercial buildings, it was announced by Valveblower Co. of California, Inc., Dept. AC&RN, 13725 East Rosecrans Ave., Santa Fe Springs, Calif.

A new principle of air blending utilizes aerodynamic discs moving axially along a shaft (see drawing) within blower wheels.

"As shown, each blower is a double-inlet, double-width unit," it was explained. "The wheel is center supported. Two discs, one on either side of the center support, are locked together through a hollow shaft, with a constant spacing of half the total wheel width. By doing this, each unit delivers the air quantity of a single-width wheel at any given time.

"The discs move either left or



right. When discs move to the left, the right side increases its air-handling capacity by the same amount as the other side reduces its air-handling capacity. The opposite occurs when the discs move to the right.

"One side of each blower assembly can draw only fresh air, the other side of each blower assembly can drawn only heated or cooled air. The discs can close either inlet side as required. Minimum fresh air intake is accomplished by simply preventing the fresh air side from being fully closed by either a microswitch on the electric-controlled unit, or a stop built into the air motor on the pneumatic-controlled unit."

RANCO IMPROVED
"O" SERIES
CONTROLS

Higher Electrical Capacity

Service men, take note. Ranco "O" Series commercial refrigeration and air conditioning controls have a stepped-up, approved electrical rating—now 16 amps. full load, 96 amps. locked rotor with 115 volts a.c. and 10 amps. full load, 60 amps. locked rotor with 230 volts a.c.

You'll notice a restyled cover, too. Cover and mounting brackets are now finished in a durable, wrinkled black paint. Type and code numbers are stamped on top and back of control frame for sure identification in case nameplate is detached. Increased electrical ratings are listed on insulator board inside cover. New nameplates do not carry type and code numbers or ratings.

Ranco "O" Series Controls are now better than ever in performance, easier than ever to identify.

"O" Series Controls for every installation

010-1401 (shown) is a low-pressure control opening on drop in pressure. Other standard "O" Controls are low pressure, high pressure, dual pressure, dual temperature models with variations according to fixed and adjustable differentials, operation on rise or drop in temperature or pressure, with or without manual reset, cut-out and cut-in ranges, capillary tubes. Gives you replacement controls for general applications in commercial air conditioning and refrigeration installations and special applications in ice cube machines, milk coolers, signal circuits, wide-cycle defrost, and others.

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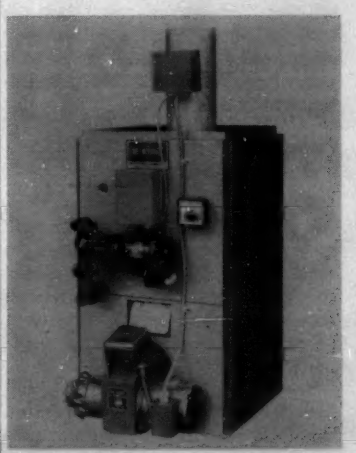
COLUMBUS 1, OHIO

Service Men! Get this book! —Ranco Book No. 1660 lists "O" Series, and nearly 5,000 other Ranco replacement control applications. See your Ranco wholesaler for a copy (not available from factory).



Boiler-Burner Units Come In 4 Sizes

Four sizes of square steel boiler-burner units made in 580, 770, 840, and 960 sq. ft. hot water ratings are announced by Quiet Automatic Burner Corp., Dept. AC&RN, Newark 4, N. J.

Boilers are ASME stamped and constructed. Four-gallon tankless HW coils are standard equipment.

New boiler features Minneapolis low-voltage thermostat, triple aquastat, circulator type "KB" Quiet Automatic oil burner.

Pump Circulates Water In Cooling Systems

A bronze utility pump applicable for circulating water in cooling systems has been introduced by Kam Products Corp., 237-249 Alabama Ave., Dept. AC&RN, Brooklyn 7.

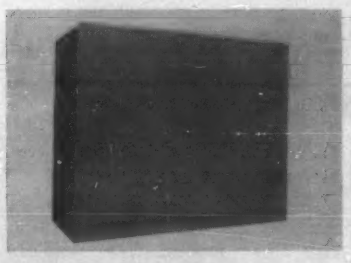
The pump is fitted with a corrosion resistant bronze housing, leak-resistant seals, balanced impeller, and a G-E ¼-hp. motor, according to the company.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer.

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.



Self-Contained Units Use Larger Compressors

New self-contained water-cooled air conditioners in 15, 30, 45, 60, and 75-ton capacities have been introduced by Typhoon Air Conditioning Co., Div. of Hupp Corp., Dept. AC&RN, 505 Carroll St., Brooklyn 15.

They incorporate two, three, four, and five 15-hp. hermetic compressors respectively.

"In addition to the advantages of larger compressors," Typhoon said, "the new units offer reserve power capacity that assures full cooling effectiveness on hottest days; all copper tube-within-tube condensers that operate on city water or cooling tower without change of circuits; and easy installation made possible by complete factory assembly and internal wiring."

The 30-ton unit, measuring 84 in. wide, 45 in. deep, and 92 in. high, has a capacity of 364,000 B.t.u.h., it was stated. The 45, 60, and 75-ton units, measuring 120 in. wide, 45 in. deep, and 103 in. high, have announced B.t.u.h. ratings of 558,000, 610,000, and 728,000 respectively. Steam heating coils are available with all models.

Furnace Designed For Utility Area

A new "GH Series" of gas-fired forced air furnaces especially designed for installation in residential utility areas has been introduced by Lennox Industries, Inc., Dept. AC&RN, Marshalltown, Iowa.

The furnaces, engineered for optional addition of central air conditioning, are finished in tan and brown baked enamel.

"New convenience, economy, and noiseless operation have been built into the GH Series units, which have an inner liner to assure proper air flow during combustion and to keep the outer cabinet cool," it was stated.

"Other features include a fuel-saving steel heat exchanger, gas-tight 'Silent-Seal' flue connection which moves freely with temperature changes, floating 'Sulky' blower, and a 'Hammock' filter.

The new models range in height from 58 to 70 in.; in width, from 16 to 36 in.; and are 27¾ in. deep. Down-flow versions are available for basementless homes with perimeter heating, and models with three-speed direct drive blowers are included in the series. All are adaptable to every type of gas fuel.

Looking for a Business to Buy . . . ?

Check the Business Opportunities Section in the classified advertising columns.

Winter Air Conditioner Is for New Home Market

A line of Janitrol gas-fired winter air conditioners, designed for the new construction market, has been announced by the Janitrol Heating & Air Conditioning Div., Surface Combustion Corp., Dept. AC&RN, 400 Dublin Ave., Columbus 16, Ohio.

The new FVB models, known as the "J-Line," are said to retain quality construction features often omitted in units in this price range.

The units have an over-all height of 46½ in., "making them well suited for installation as either high-boys or as low-boys, since only 4-ft. 8-in. headroom is needed for furnace and ducts," it was stated. "The sides and back of the cabinet are die-formed from a single sheet of steel to which the bottom frame and internal partitions are accurately located and spot welded. This forms a strong, box-type cabinet of unusual rigidity."

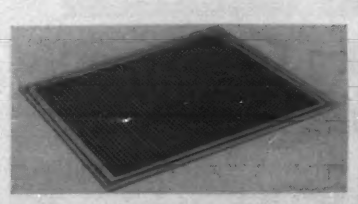
Design features include: all-welded "Multi-Thermex" heat exchangers; two-pass internal air flow "of very low resistance"; suspended, rubber-cushioned blower assembly; "Unidrive" permanent split capacitor motor blower; a complete, factory-wired control system and foil-faced glass fiber insulated heat exchanger compartment.

The J-Line models are available with 80,000 and 100,000 B.t.u. inputs.

Add Cut-It-Yourself Aluminum Filter

Addition of a new "cut-it-yourself" aluminum filter to its line of air filters for furnaces and air conditioners has been announced by Research Products Corp., Dept. AC&RN, Madison 1, Wis.

Except for its size (32 in. by 40 in.), the new filter is identical to the 15 in. by 24 in. trim-to-size "E Z Kleen" air filter for room air conditioners.

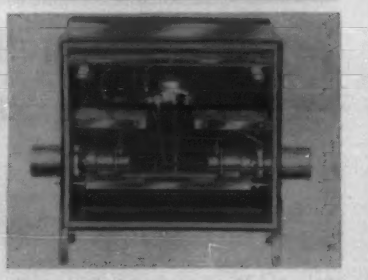


Diffusers Have Matching Return, Exhaust Units

A new series of "Perfair" perforated air diffusers with matching return or exhaust units has been announced by Air Devices, Inc., Dept. AC&RN, 185 Madison Ave., New York City 16.

The diffusers incorporate interchangeable cores available in unlimited air pattern arrangements for one, two, three, or four-way blows, it was stated. These units also include built-in air controllers for positive adjustment of air deflection after installation.

Perforated face plate blends in with acoustical ceilings. Matching return or exhaust units harmonize to enhance architectural design.



Mixing Boxes Offer Precision Control

A new exclusive feature, "Con-Vol," now incorporated in Thermotank perimeter and ceiling high velocity mixing boxes, assures precision control of air volume and temperature over a wide range of varying inlet pressures without the use of linkage or complicated operating mechanism, according to Air Devices, Inc., Department AC&RN, 185 Madison Avenue, New York City 16, which manufactures the high velocity mixing boxes.

...REVERE

DRYSEAL

COPPER REFRIGERATION TUBE

It's a dead cinch to bend dead-soft DRYSEAL. Your hands are all you need, even for the most intricate bends. And its ductility and special temper make it extremely easy to flare for compression fittings without danger of splitting.

And to make sure you get a tube that is free of even the slightest trace of dirt or moisture we double crimp DRYSEAL on both ends, at the factory. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. That's why the inside of DRYSEAL shines like a new penny. This double crimping does not interfere with installation for it is made in such a way that the diameter of the tube does not change, permitting DRYSEAL to be passed through any opening large enough for the tube itself. Economical tube sizes range from ⅛" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.

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COPPER AND BRASS INCORPORATED

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Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

Installation, Operating Costs Biggest Factors Affecting Sales—Whirlpool

Whirlpool Corp.
St. Joseph, Mich.

Editor:

I will try to give you in very brief terms, our thinking relative to the central air conditioning business in the order of the questions which you attached to your letter.

1. I believe enough families do want the benefits of central air conditioning to provide a very substantial market. However, it is doubtful that enough families want it more than they want some other convenience or necessity, costing the same money as today's central air conditioners.

Installation Costs Too Great a Portion

2. Installation represents far too great a portion of the cost of central air conditioning. A reduction in the price of the equipment at manufacturer's level has too little an effect on the price which the consumer pays.

Improvement in this condition can be attained by design of equipment to be installed in existing homes and by close cooperation between the equipment suppliers and builders of new homes.

3. It is possible that conflicts in distribution systems do tend to sap some of the strength needed to sell central air conditioning to the public. It is believed that cooperation between all manufacturers, regardless of distribution methods, could advance the selling of central air conditioning to the consumer.

Role of Other Appliances

4. While the sale of other comfort cooling appliances may tend to momentarily retard the sale of central air conditioning, in the long run such sales will create an even stronger demand than if those appliances had not been sold.

5. I am probably at odds on this point with the rest of the industry. But it is my personal feeling that one of the greatest single factors affecting the sale of central air conditioning, aside from marketing practices, is the cost of the installation to the consumer and operating cost. Therefore, while the reverse cycle air conditioning will undoubtedly improve during the next five years, I feel that the industry will achieve greater volume by designing units which will provide lower first cost, lower operating cost, and lower maintenance cost. I seriously doubt that the reverse cycle will offer this opportunity during the next five-year period.

Problem of Add-ons

6. I do not feel qualified to comment concerning the addition of cooling units to existing centrally heated homes. But I can say on behalf of our corporation, that we have not found means of properly engineering and applying central cooling for existing home sales which will create a volume that would justify the expense.

The same effort spent working with the builder will produce, generally, a better application with more sales volume.

7. It is my observation that the small manufacturer is doing so great a share of the heating business that no well planned promotion program by a single manufacturer has been practical.

I would say, if an example were to be given of one that has made an effort, I would have to suggest Lennox.

I believe a great deal of the energy of the heating business has been consumed in trying to meet local manufacturers' cost. So much has been expended in this direction that those manufacturers who have tried to distribute in a broad area have not found the business particularly profitable.

8. The growth of the market for central comfort cooling systems in the South has spurred the equipping of new homes in the South with central heating systems. There are too many cases in point to make this a matter of conjecture.

9. There is no doubt in my mind that "opening up" existing home mortgages for the addition of central air conditioning systems would do a tremendous amount to spur the sale of the product.

I am not an expert on this matter but I can imagine that the competition for the available money would be pretty keen from manufacturers of products other than central air conditioning.

L. M. LARKIN,
General Manager,
Air Conditioning Div.

Majority of People In Southwest Realize Need for Air Conditioning

Southwest Mfg. Co.
Aurora, Mo.

Editor:

We will attempt to give you our best possible thinking in answer to the questions, in the order that you have given them.

1. In answer to this particular question we must point out that our experience in year-round air conditioning has been limited to only a certain area. The northern boundaries are the states of Nebraska and Iowa and work south to and including the states of Louisiana, Mississippi, and Texas.

The majority of the people in these particular areas realize the need and the comfort of air conditioning equipment. We can verify this because we have been at both ends of the purse strings.

As you know, we manufacture and market a substantial quantity of evaporative coolers which is a lower type investment in air conditioning equipment. We build and sell also mechanical refrigeration air conditioning equipment and find there is a definite demand for both items. Comfort cooling is necessary for heathful living.

2. There certainly is evidence that some of the present day installation practices and low costs of installations are dampening the enthusiasm for the product. However, I would believe the enthusiasm is being dampened more at the dealer

(Concluded on next page)

STANDARDIZE ON HONEYWELL
FOR ALL YOUR
RESIDENTIAL AIR CONDITIONING
CONTROL NEEDS

Now, a new line of

Terminals, reset button and differential are together, needs access from only one side.

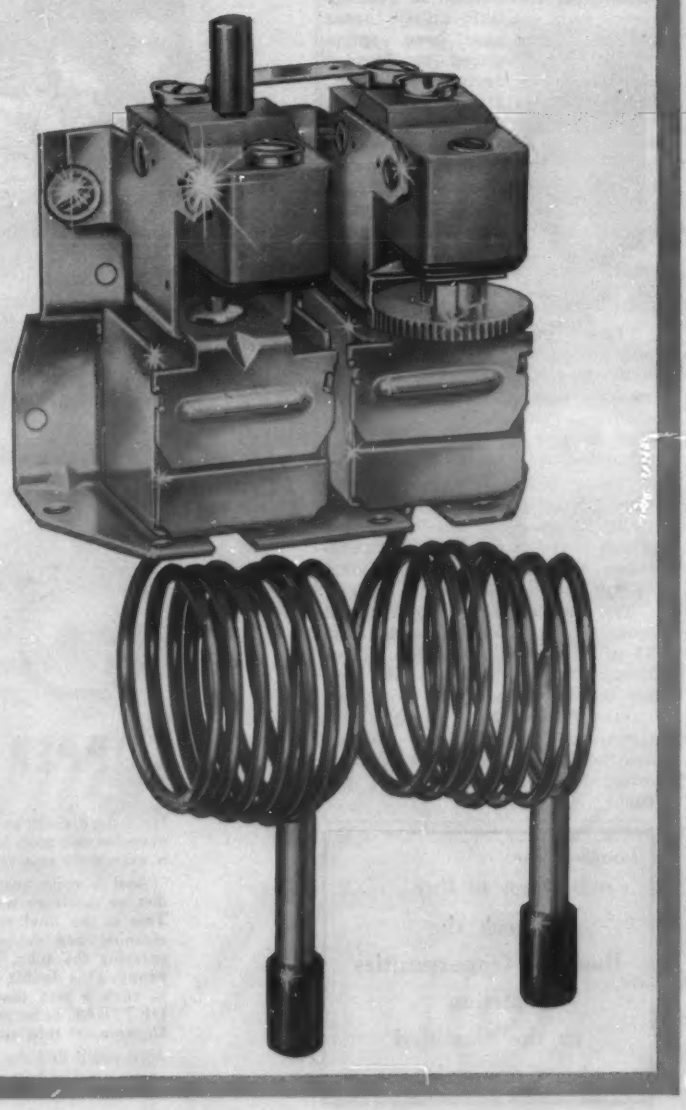
Trouble-free—famous, long-lasting MICRO SWITCH enclosed switch seals out dirt, lint and moisture.

No tweezer parts—a simple, direct-acting switch mechanism. No pivots, levers or springs.

Simple, differential adjustment—knurled differential adjustment knob can be operated by hand without use of tools.

Stainless-steel diaphragm — designed for precision action and lasting operation . . . unaffected by corrosive atmosphere.

One-piece capillary—eliminates the possibility of leaks or weak spots, normally a problem at soldered joints.



How To Handle 'Low Cost' Operations--

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and manufacturers' level than it is at the level of the homeowner.

Low cost installations practices created by some organizations certainly are creating an unhealthy competitive picture. We believe the only way to correct this particular condition is to let such contenders eventually eliminate themselves through their non-profit practices.

The homeowner buys his air conditioning equipment already installed in his new home or he has it added on to his existing heating system.

Through lack of salesmanship on the part of the dealer, or lack of education on the part of the industry to the homeowner, the homeowner really does not realize what type of system he has in the home until after he has had it under operation for a period of time.

Then, when he finds that something is wrong and inspection is made, either the prime equipment is not up to specifications or the installation is not up to standards.

'We See Upgrading'

Actually, as a result of this, we can see an upgrading in certain areas where installations are concerned. I believe definitely that if the industry is behind customer education, we can relieve these problems substantially.

3. This is definitely yes. Both majors and minors in the industry are guilty. Poor management plus over production and dumping has created a most unstable price condition.

We believe this is definitely a misinterpretation of the word, "competition." The most slaughterous conditions are created by those who are attempting to buy their ways into the market instead of resorting to education and salesmanship, and common sense.

4. The promotion and sale of such products as room air conditioners, dehumidifiers, fans, and electronic filters certainly is not retarding the progress of year-round air conditioning.

The room air conditioner gives the homeowner a taste of the fruit. They have a definite place in this industry towards educating the homeowner to the benefits and comforts of central air conditioning.

Many people using window units reside in rented property and in apartment buildings. As they move out of these dwellings they will know that they should have central air conditioning in order to be thoroughly comfortable in their new homes.

As far as fans are concerned I would say that the attic type fan aids in the air conditioning problem. With electronic filters, we definitely believe they have a great part in the future of year-round air conditioning.

Education of Homeowner

They clean the air completely while the air conditioning unit controls the humidity and temperature. Again, all of these things lend to the education of the homeowner for year-round comfort.

5. How can it miss? The utilities are behind it. They will educate the public and help make the reverse cycle unit with supplemental heat a definite demand item.

Of course, the utilities have their own selfish motive but still in all, they will create a buying demand. For other reasons, we definitely believe there is a place for this type of air conditioning equipment in the future markets.

We would say that within the next five years we will see great strides in the industry towards this particular application and we hope, within the near future to join the throngs. We find that refinement in the product itself is one of the fundamentals to its progress in the industry.

'Fast-Buck' Dealers Ignore Add-on Market

6. In regards to the "add-on" cooling for existing central heated homes we know of no one who is making a real effort to penetrate this terrific market. Most heating and air conditioning dealers or contractors are so enhanced by this "fast buck" deal in the new house market that they are forgetting about the existing home and how to make real money.

Either this, or the ones who do know are too lazy to make the attempt. The day of the good, door-knocking furnace salesman is almost nonexistent and the day of the good, year-round air conditioning salesman has not begun.

It is up to the industry to relieve these complexities and educate the dealer into direct selling. The sooner he knows the true benefits of air conditioning and the merits of the products he is trying to sell, the easier it is going to be for him to capture the replacement or "add-on" market.

We are trying to accomplish this task but how we will exactly do it, we are not sure.

Only Imagination Has Been Price

7. The only imagination that has been used in selling residential heating systems in the past several years has been price and price alone. This falls back, in part, to question number six where imagination and creative selling will have to be rejuvenated before we can capture the real money market.

8. Very definitely so. Either the cooling unit is sold in combination with the forced air heating system or the heating system is sold ready for air conditioning to be added at a later date.

We have seen heating requirements progress from the floor furnace to the forced air system. Now the market has a definite trend towards the combination of forced air and cooling equipment.

After Dust Settles, A Bright Future

9. The opening up of existing home mortgages at a low cost would be a definite advantage to the air conditioning industry. Other home improvements, and even automobiles, are purchased and financed through this media.

The air conditioning market today seems to be of the "Cimmaron" type scramble. After initial dust has settled, we feel there is for all of us, a bright future in the home comfort air conditioning field.

B. T. CHURCH,
General Sales Manager

pressure controls

HONEYWELL PRESSURETROL*— COMPACT, DEPENDABLE— 11 MODELS TO CHOOSE FROM

This new Honeywell P432 high-low Pressuretrol is compact and functionally designed to meet the needs of today's neat, well integrated control panels.

You can choose the P432—or any of Honeywell's 11 Pressuretrol models to meet the demands of every type of residential air conditioning equipment and a wide range of other refrigeration applications. These Pressuretrols are available as separate high, separate low or combination high-low devices. Both high and low pressure controls can be ordered with manual reset. Low pressure controls can be specified with adjustable or fixed differential.

Honeywell Pressuretrols can be ordered as part of a panel or purchased separately.

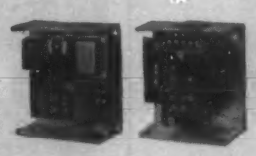
Now you can standardize on pressure controls designed specifically for packaged air conditioning units, made, matched and backed by Honeywell.

Get complete information on Honeywell's line of Pressuretrols and other air conditioning controls. Call your local Honeywell office or write Minneapolis-Honeywell, Dept. AN-11-51, Minneapolis 8, Minnesota.

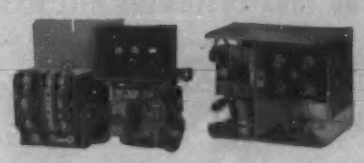
*Trademark

These control panels—for use with Honeywell Pressuretrols— offer you maximum flexibility

For self-contained units — WB212 panel with pressure control. For larger packaged units.



For attic type units—W429 panel for self-contained, add-on, one-stage cooling units. W430 panel for two-stage, self-contained cooling units (time delay available).



For remote condensing units—(These Honeywell Panels contain motor starter and pressure control). W431 panel for units up to 7½ tons. W435 panel for remote 2-ton and some 3-ton condensing units.

Evaporator Sequencing Panel—W226, designed for use with W431 or W435.

Honeywell

First in Control

'You Can Bet We're Making More Than Feeble Attempt,' Says Peerless V. P.

Peerless Corp.
1853 Ludlow Ave.
Indianapolis

Editor:

1. No, there are not enough families who truly want complete home air conditioning to provide a substantial market with real growth possibilities!

Why? . . . because our industry has consistently sold too many "nuts and bolts" and too little consumer benefits. We haven't really done a job in selling our "improve your health story" or "have a cleaner house," "freedom from out-door noises," "improvement in family relations," etc.

Instead, we have consistently sold so much down, so much a month, and my widget has a gidget that Joe Blow's doesn't have. You don't create mass market merchandising in this manner.

Too, there are many misconceptions on the part of the consuming public on air conditioning. Mrs. "Nasty Mouth" honestly got a chill as she visited the completely over conditioned neighborhood theater to view her favorite movie.

Since she hasn't been sold on the benefits of air conditioning and since she realizes this purchase to be a substantial one for her family, she takes occasion to express herself most vociferously in an "anti" conversation with her friends.

They, having sustained a similar experience and being equally mindful of the dollar investment required in complete home air conditioning join the chorus and irreparable damage has been done.

No, Mr. Taubeneck, there is not a substantial consumer segment of our market that really *"wants"* air conditioning.

2. Generally speaking I do not believe that present-day installation practices and costs are dampening enthusiasm for the product.

Most Installations Pretty Good

Surely, we've seen some bad installations. But, most of the ones we've seen have been pretty good and generally did the job. Cost is and will continue to be a retarding factor until we have adequately sold the benefits.

If we do a good job on selling user benefits, our cost would look like a real bargain. Certainly, the cost of complete home air conditioning measured objectively on a yard stick over a five-year period of time and evaluated against the purchase of one of our expensive automobiles would look most reasonable.

The difference is, of course, the auto industry has sold its user benefit theorem. There are hundreds of ways that our installation practices can be improved. Yet, I don't think that this stands as a major retarding force to our projection of mass market.

3. We definitely do not feel that competitive warfare between warm air furnace, plumbing, wet heat, and "old line" air conditioning, commercial refrigeration, appliance outlets, etc., is handicapping the total progress of our industry.

It is basic that a symphony orchestra makes more and better music than a one man band. What we need is more real competition . . . more people raising their voices to the benefits that accrue to the family from air conditioning.

Where the basis of competition is to extol the lower cost of installation from one source as opposed to another, then no great benefit is derived by the industry.

However, I don't believe there is a great detriment either. If these voices could simply be raised in selling user benefits generally, we'd all profit handsomely from the competition.

4. No, we don't believe that the promotion of room air conditioners, dehumidifiers, fans, and electronic air filters is really retarding the progress of year-round residential air conditioning.

Actually, a completely air conditioned home should incorporate an electronic air cleaning device, along with humidity control for both summer and winter, a cooling and a heating system.

Room Unit Owner Best Propsect

It is our sincere opinion that one of the best prospects for central air conditioners is the man who owns one or two room air conditioners. The man who owns and operates a dehumidifier has already had a "taste" of the benefits that can accrue from air conditioning.

The man who owns several electric fans has also had a "taste" in the form of exaggerated air circulation. He's had a treatment instead of a "treat." He should be a fertile prospect for us. The more these industries promote, the better we like it.

5. Progress we can expect in the next five years in the application and sale of reverse cycle units and supplemental resistance heating. . . ?

As you probably know, our company is a pioneer in this field. You've asked the $64,000 question, I'm afraid I can't answer it.

There are many variables in

(Concluded on next page)

Meet the new Peerless **DIXIE AIRE**

. . . a refreshingly new and advanced line of sectional gas furnaces with extra large blower capacity, designed especially for use with air conditioning

LOTS AND LOTS OF AIR—3 models now...more to come

60,000 Btu input—1200 cfm at 0.5" ESP
85,000 Btu input—1600 cfm at 0.5" ESP
115,000 Btu input—2000 cfm at 0.5" ESP

SOMETHING BETTER IN HEAT EXCHANGERS

Sectional steel combustion chambers of advanced "Airfoil" design . . . Spaced on 4½" centers with 2¼" minimum clearance to insure ample air flow and efficient heat transfer . . . New improved ribbon-type burner.

YOU AND YOUR CUSTOMERS WILL LIKE THIS:

- Cabinet finished in pleasing new copper tone color with decorator-styled chrome trim.
- Year-round thermostat for heating and air conditioning.
- Close-clearance approved for closet installation.
- Belt-driven blower.
- Trouble-free V-81 Honeywell silent gas valve.
- Proved and approved by actual in-the-home installation.
- Approved by the American Gas Association.

THE **CHALLENGER**

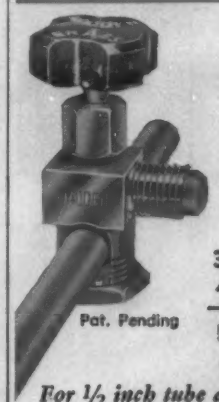
. . . a lower priced companion line that's a "natural" for home builders. Same Btu inputs as Dixie Aire but somewhat lower CFM ratings. V-81 Honeywell silent gas valve and a standard heating thermostat. Same copper tone finish, less chrome trim.

PRICES? You'll be pleasantly surprised and pleased. See your Peerless Distributor or write us.

PEERLESS
CORPORATION
1853 LUDLOW AVE., INDIANAPOLIS 7, INDIANA

SEE YOUR PEERLESS DISTRIBUTOR, YOUR ONE-STOP HEADQUARTERS FOR HEATING, AIR CONDITIONING AND HEAT PUMP EQUIPMENT . . . ELECTRONIC AIR FILTERS . . . PIPE, FITTINGS, REGISTERS AND GRILLES.

PERFORMANCE PROVED!
Madden HP-41 Hermetic Port Valve



Pat. Pending

1 VALVE PIERCES 4 TUBE SIZES!

3/16"	1/4"
5/16"	3/8"

For ½ inch tube ask for the Madden HP-68

Write for free catalog R-358 listing other Madden performance-proved products: valves, fittings, charging lines, etc.

MADDEN BRASS PRODUCTS COMPANY
AURORA 6, ILLINOIS, U.S.A.
EXPORT: Ad Auriema 89 Broad St., New York, N. Y.

How Peerless Is Attacking Markets--

(Concluded from preceding page)

this one. What will research and technology yield to marketing? Will we get available for the market a more efficient device? Will our primary marketing areas have the normally mild winters that are necessary to future growth and expansion of the market in those areas?

If we get another cold winter in Florida, it will hurt this industry just as the past one did. A couple of mild winters in a row will serve as a real spring board.

Couple this with a real advancement in technology and product development, and we might well see 50% of all new installations going reverse cycle five years hence. This, we believe, is not an unreasonable expectancy.

6. Yes, someone is making more than a feeble token effort to penetrate the colossal add-on cooling market. Who? . . . scattered dealers in a number of areas.

We can and will name a few specifically, starting with our own installation division here in Indianapolis. You can bet we're making more than a feeble attempt.

'Inspiration, Perspiration Two Major Ingredients'

How? . . . there's no secret. Inspiration and perspiration are the two major ingredients required. Active participation in home shows, fairs, and other consumer exhibits with an air conditioned booth, neighborhood canvassing activity demonstrating the real McCoy in the form of the finished goods we desire to sell.

We're doing this with crews of men on Saturdays when people are mowing their lawns. It has been productive.

Broad display advertising in the local telephone book . . . radio, television, and newspaper advertising in substantial quantity to create demand through selling user benefits.

You'll recall your own publication releasing news to the industry of our recent gift of a year-round heat pump to the Press Box at Victory Field here in Indianapolis.

We got a lot of user benefit advertising from this gift during the warm humid nights of the broadcasts and telecasts of these games.

Direct mail? . . . yes. An abundance. Trade-in offers? . . . yes, $100 for your old window unit . . . let's trade up to something better.

'You Name It, and We've Tried It'

You name it, and we've tried it. Think of something new, and we will try it. But, this is not a "sporadic" effort. It is a constant contining one.

The result? . . . check our sales in the local market. We'll be glad to have them appraised on a per capita basis with any of those you might care to evaluate.

Others that are doing this job well: A. C. Tilley Co., Evansville, Ind.; Hoosier Heating Co., Terre Haute, Ind.; Cooperative Fuel Co., Battle Creek, Mich.

Add these to the list of those received from others and you will see that a pretty decent job is being done. And, you'll also note that these firms are not really "crying" about sales and profits.

7. It seems to me that many of the answers applicable to section 6 apply with full force to section 7. There's been some real imagination applied to selling residential heating systems, notwithstanding substantial opinion to the contrary.

The only problem is that this imagination has been applied too rarely by far too few. Yet, there are outstanding examples around.

We could take you on a guided tour to meet people who have really made a substantial amount of money in the residential heating and air conditioning business. They didn't do this sitting on their . . . waiting for prospects to walk through the door.

Probably no firm has applied more imagination to selling than our erstwhile competitor, The Holland Furnace Co. We don't commend their tactics, but we certainly praise their aggressive spirit, their willingness to really work to create business where none existed before.

Still No Substitute For 'Skinned Knuckle'

Take their methods and apply honest practice to it, and you'll have a combination that is hard to beat. There is still no substitute for the "skinned knuckle."

8. Yes, I believe that the growth of the market for comfort cooling in the south has spurred the equipping of new homes with central heating systems.

Why? . . . because people are becoming more conscious of year-round comfort control as a result of their usage of central air conditioning systems.

I am absolutely sure that sales records will support this theory. Certainly, our own will if support cannot be found for it elsewhere.

9. Yes, I believe it would help tremendously if we were able to "open up" existing home mortgages of low cost to add the cost of air conditioning to the mortgage. This would spread the payment over the life of the mortgage and would appreciably reduce the monthly amounts.

On the other hand, it is worthy to note that we have not, as an industry, made good use of the FHA Title One Vehicle.

Literally millions of homeowners have FHA Title One purchasing capacity who have not been "sold" on air conditioning.

We do not believe that finance is presently a substantial deterrent to our market. We've had very few people through our retail division who wanted to purchase air conditioning for whom we were unable to secure adequate financing.

Our problem is still that of opening the "mass" market. Until we create greater user demand through an effective merchandising of user benefits, we'll not really need too much help from financial institutions.

Because, until we do this, we will not effectively reach that segment of the market which is presently overburdened with financial responsibility.

If the commentary herein contained can be of value to you, we will be happy. If it can't, our time has not been wasted since you have helped us recap our own thinking and have thus assisted us in projecting our 1959 merchandising program.

O. U. MUTZ,
Vice President

NOW...A SIMPLIFIED LINE

of refrigeration controls!

Your inventory is simplified . . . yet, you get the capacity and versatility to satisfy all refrigeration requirements. Penn single pole models are rated to 16 Amps., 115 V., 10 Amps., 230 V. single phase . . . two pole models, rated 24 Amps., 115 or 230 V. single phase.

And, you get real economy. The two pole heavy duty controls handle polyphase motors without use of magnetic starters (where protection against overload and single phasing is provided). With their two separate circuits, these models are really 2 switches in 1. Don't settle for less . . .

Ask your wholesaler!

Series 270 single pole and Series 1272 two pole single function for either low or high pressure. Also temperature models.

Series 271 single pole and Series 1273 two pole dual function. Temperature models also available.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 39th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Report on Education

Another article in a series dealing with all levels of education and training in the air conditioning and refrigeration industry.

By Frank J. Versagi, Technical Editor

7. Association Schools

Another important way in which experienced men are exposed to education is through clinics and forums sponsored at schools around the country by trade associations. Those which come to mind right off are the sessions sponsored by National Warm Air Heating & Air Conditioning Association and those sponsored by Institute of Boiler & Radiator Manufacturers—NWAHACA and IBR.

Each year at several colleges around the country, associations such as these hold three to five-day seminars on some phase of the industry of specific interest to their members.

Generally, the association plans the courses and selects the schools. It also obtains any off-campus instructors which might be needed, and it usually supplies the study materials.

The individual school handles the actual administration of the course on its campus, providing university instructors where needed, classroom space, and arranges for housing. The school also handles promotion of the course in its area.

Such conferences are operated on a non-profit basis, and any deficit is paid to the school by the sponsoring association. Cost to attendees is nominal—on the order of $25.

Associations also aid education in the field by publishing technical and business reports, by issuing their own manuals and texts, by sponsoring research projects at universities and research institutes, and by holding educational conventions.

RSES Study Course Is Long Range Endeavor

Perhaps the most ambitious, long-range educational endeavor by an association is the Refrigeration Study Course sponsored by Refrigeration Service Engineers Society.

Organized at its International Headquarters, this program is implemented at the local chapter level. The entire course takes three years to complete, each year consisting of 36 two-hour sessions and several examinations.

Instructors are usually sales or engineering representatives from some manufacturer, although professional educators from the local school system are also used.

Now in its third year, the RSES program has several hundred students enrolled in some 35 chapters. Student enthusiasm runs high, and carryover from first to second year has been gratifying. To enroll, a man must be or become a member of RSES and he must purchase the basic text, the All Makes Service Manual. Supplements to the manual are free after he has joined the course.

In these classes, as in manufacturers' service schools, the students have varied backgrounds—from novices to people wanting to get a license and therefore brushing up on fundamentals. However, since the course outline is fixed, everybody knows what comes next, and the teacher can aim at what seems to be the most effective level for his group, then maintain that level throughout the year.

A major advantage that is felt the RSES school will have is that the course will be recognized by industry the country over. There will not be the lack of recognition which is frequently a weakness among private trade schools.

Educational Efforts By RACCA and UA

Becoming increasingly active in education and training are the Refrigeration & Air-Conditioning Contractors Association and the United Association. In the earlier discussion of apprenticeship programs, mention was made of the existence of Joint Apprenticeship Committees.

These committees, composed of representatives of management (RACCA) and labor (UA) are sometimes quite active in organizing and maintaining service-level courses.

As an example, the New Jersey State Pipe Fitters Joint Apprenticeship Committee recently received a certificate of registration from the U. S. Department of Labor in recognition of its apprenticeship system. The joint committee's training program also received a certificate of approval from the New Jersey Department of Education. Such approval indicates that the training facilities have been inspected and approved and that standards for apprentice training have been met.

Course is divided into one domestic, three commercial, four air conditioning, one marine, and one industrial segments.

RACCA of Chicago has developed a five-year program for training men in refrigeration, air conditioning, and heating. All students are employes of the members of RACCA, and employers are furnished quarterly reports on grades, attendance, ability, aptitude, and attitude of enrollees.

Now in its third year, the Chicago program has proved very successful in helping to increase the supply of trained men for the refrigeration and air conditioning field, according to Ion Caloger, chairman of the training program.

Around the country there is no definite pattern of effective RACCA-UA schools in refrigeration. Local conditions, which include local political conditions, frequently influence the relative effectiveness of any joint committees. As a result, some localities have strong training programs in progress or in formation; other localities have nothing at all.

Of course, monthly meetings of trade and engineering societies are a valuable source of information. And among members, criticism is made that the speakers too often are in a field of interest to only a few, or that speakers too often present sales talks instead of educational sessions.

New low-cost, high-capacity

thermostat

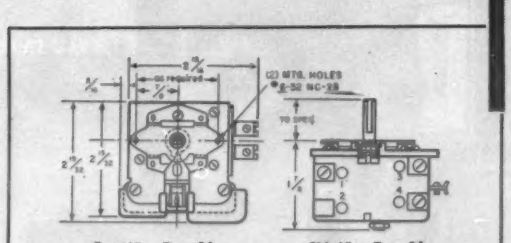
controls several circuits with a single dial

WILCOLATOR SERIES GA PROVIDES OFF—FAN ONLY—FAN and COOLING

In the new Wilcolator Series GA thermostat, a built-in switch—cam operated by the dial shaft—makes it possible to control several circuits with a single dial and disconnect more than one line when the dial is in Off position. In air-conditioner applications, this provides for Off, Fan Only, and Fan and Cooling.

Featuring an improved snap-action switch for higher contact ratings, these compact, low-cost thermostats have ample capacity for heavy duty appliances and medium industrial requirements. Amplitude factory set to your specifications. Contact mechanism not affected by vibration. Can be used with any dial or pointer having a ¼-in. shaft hole.

For more information, write The Wilcolator Company, 1001 Newark Ave., Elizabeth, N.J. *In Canada:* Wilcolator (Canada) Ltd., 221 Evans Ave., Toronto 14, Ont. *Export Address:* Wilcolator, 1010 Schaff Bldg., 1505 Race St., Philadelphia 2, Pa.



Front View Type GA — Side View Type GA

SPECIFICATIONS

Standard temperature range: 0°F min.; 585°F max.

Special temperature ranges: To customer's requirements

Type G1-A: Contacts open on temperature rise

Type G2-A: Contacts close on temperature rise

Contact rating: (Type G1-A) 30 amp, 125 and 250 v a-c noninductive load

Motor ratings: (Type G2-A) 120 to 240 v a-c; running current—14 amp; locked rotor—60 amp

Mounting: Back of panel or in enclosure

Terminals: Screw type, AMP or Arkles; standard shaft size—¼ in. flatted to .156 in.; length to customer's specifications

THE Wilcolator COMPANY

MANUFACTURERS OF LIQUID EXPANSION ELECTRIC THERMOSTATS FOR:

ELECTRIC RANGES • ROOM COOLERS • AIR CONDITIONERS • CLOTHES DRYERS • SPACE HEATERS • ROLL WARMERS • ROASTERS • FRYERS • STEAM TABLES • WARMING OVENS • RANGETTE OVENS • WATER HEATERS • BAKE OVENS, ETC. • STOCK WATER HEATERS • RESTAURANT APPLIANCES • VENDING EQUIPMENT • PACKAGING MACHINERY • PHOTO DRYERS • BLUEPRINT MACHINERY • ETC.

ALL WILCOLATOR THERMOSTATS ARE UL LISTED AND APPROVED

Cooling the Aluminum and Glass Structure

Blanket of Conditioned Air Is Provided Between Large Glass Exposure and Manor Building Occupants

PITTSBURGH — The aluminum and glass facade has become an increasingly common sight on modern large buildings. In many cases, 50% or more of these glistening walls are glass.

It is imperative, therefore, that a blanket of warmed and cooled air be provided between this large glass exposure and the building occupants, it was pointed out by the Trane Co.

Getting ventilation air to the building perimeter, however, is a problem when the building architecture does not permit an extensive pattern of openings in the exterior walls, Trane noted. This problem was encountered in the 14-story Manor Office building for the Pennsylvania Railroad—latest addition to Pittsburgh's skyline.

The Manor building has 206,244 sq. ft. of floor space. Of this total, 115,058 sq. ft. (the top 11 floors) is usable office space. Aluminum and glass curtain walls with steel frame construction have been utilized on these floors. The lowest three floors are an open-air parking garage.

Tenants Required Individual Control

Because of the type of tenant to occupy the building, it was necessary to provide air conditioning with some means of individual control.

Individual fan-coil "UniTrane" air conditioners were provided at the perimeter of the building to solve the problem of glass exposure. These units utilize chilled water for cooling and hot water for heating. The units were furnished with three-speed fan switches and manually-operated three-way valves to allow the room occupants to control their own conditions.

Outside air for the perimeter areas of the building is introduced by means of an interior zone duct system and interior zone "Climate Changer" air handling units with heating and cooling coils. Two floors are supplied by one unit.

Sufficient air is drawn into the system to supply all of the requirements for both the interior and perimeter zones. The supply ductwork for the interior zones was extended to a point where the perimeter would be covered.

In the event that a partition might be installed later as a tenant requirement, thereby isolating a perimeter office from the interior, the ductwork is planned so that it may be extended to any such office to assure it of proper ventilation.

Because the building is built on pilings that straddle the Pennsylvania Railroad right-of-way, there was no basement in which to locate major refrigeration and heating equipment. As a result, this equipment had to be located in a penthouse.

Purchase Steam for Heating

A 300-ton Trane "CenTraVac" hermetic centrifugal compressor was installed. Building heat is provided by purchased steam which is converted to hot water for circulation through the Uni-Trane units.

Chilled water temperature is controlled by an immersion thermostat in the leaving chilled water line at the CenTraVac, which operates a pre-rotation vane at the suction side of the compressor for heating.

A remote bulb controller which has a sensing element on the leaving water line is provided for each convertor. This controls modulating steam valves in the supply line to each convertor. The controller setting is dependent on the outdoor controller to change the control point with outdoor changes.

An automatic outside air cycle is included, which permits cooling with outside air when the temperature is suitable.

The Manor Office building and its air conditioning system were designed by Hedrick & Stanley, architect-engineer, Fort Worth, Texas. The mechanical contractor was Limbach Co., Pittsburgh.

REPRINTS
SELLING FOR PROFIT.
By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

WHAT . . WHEN . . WHERE

National Electrical Manufacturers Association Meeting
Nov. 10-14, Traymore hotel, Atlantic City, N. J.

National Association of Practical Refrigerating Engineers Meeting
Nov. 11-13, Kenilworth hotel, Miami Beach, Fla.

Better Heating-Cooling Council Meeting
Nov. 17-19, New York City.

National Commercial Refrigerator Sales Association Convention
Nov. 17-19, Golden Gate hotel, Miami Beach, Fla.

Refrigeration Service Engineers Annual Convention
Nov. 21-24, Neil House, Columbus, Ohio.

American Society of Refrigerating Engineers Meeting
Dec. 1-3, Roosevelt hotel, New Orleans.

National Warm Air Heating & Air Conditioning Association Convention
Dec. 4-5, Statler Hilton, Cleveland.

Dairy Industries Exposition
Dec. 8-13, Navy Pier, Chicago.

International Heating & Air Conditioning Exposition
Jan. 26-29, Convention Hall, Philadelphia.

Highest Quality and Most Economical . . .

Quietest Direct Drive Blower Motor

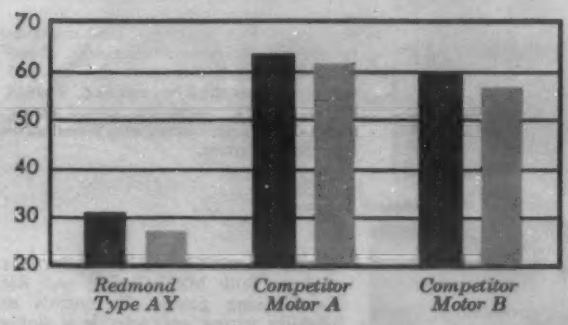
Redmond's New Design Reduces Blower Vibration to One-Fifth that of units using Conventional Shaded-Pole Motors

Place a mechanic's stethoscope on the end cap and you can easily hear the difference between the newly-designed Redmond Type AY and motors of conventional design. Try it on a Redmond 1/6 hp—the noise level is about that of a 1/35 hp motor of conventional design.

Apply vibration tests and you will be quick to agree that here is the quietest direct-drive blower motor available. The AY Tri-Flux motor is designed and manufactured in every way to give years of trouble-free service and whisper-quiet operation. The positive oil system provides force-feed lubrication. Recirculating the oil assures maximum bearing life.

The graph shows vibration test results on the new Redmond design and two competitive motors. These tests were made with the best vibration testing equipment available. The solid black bar shows vibration on the motor end cap; the gray bar shows vibration on the blower housing. The graph is decibel readings on 120 cycles, since the 120 cycle frequency is the one that is the basic source of nearly all noise problems. Reduction of vibration is a logarithmic function—the reduction of vibration in the Redmond motor to 33 decibels reduces noise to only 1/5th that of conventional motors.

The new AY is ideal for a wide variety of applications requiring a whisper-quiet, economical, high-quality motor. Contact us at Owosso, Michigan, and we will have the Redmond sales engineer in your district call you at once.



The Standard of Dependability

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Subsidiary of CONTROLS COMPANY of AMERICA
OWOSSO, MICHIGAN
THE BIG NAME IN SMALL MOTORS
REDMOND

What Happened to Residential Air Conditioning In Wichita

For five years in a row AIR CONDITIONING & REFRIGERATION NEWS has conducted surveys in various cities to determine exactly what was happening in residential air conditioning.

This year, however, the surveys are much broader in scope, for not only do they reveal the residential cooling picture but they also show what the same contractors are doing in the related fields of residential heating and commercial applications, and tackle such vital questions as the pattern of distribution, methods of advertising, promotion, and sales.

Home Cooling Sales Off; Gains Noted In Heating, Commercial Applications

By C. Dale Mericle

WICHITA, Kan. — Four cool weeks in June and July spoiled what might have been a pretty good year for residential air conditioning here, according to some contractors.

As it turned out, 14 firms whose combined sales represent about 75% of the total in this area had installed 825 residential air conditioning systems this year through Oct. 18. This should be roughly equivalent to 1,100 for all contractors, compared with 1,307 claimed by 38 contractors for the first 10 months of 1957.

The 1958 data was obtained in the fifth annual survey made in this area by AIR CONDITIONING & REFRIGERATION NEWS.

Four of the 14 contractors, however, chalked up some gains in residential air conditioning; seven showed gains in residential heating, and eight reported improved sales of commercial heating and air conditioning.

It is likely that the residential heating sales of these 14 firms are fairly representative for the area, but the same may not hold true for their reports of commercial air conditioning and heating.

Some of these 14 leading residential contractors are also quite active in the commercial field, but this list does not include a few large mechanical contractors whose activities in residential are extremely limited (two or three a year for friends or employes). Their commercial sales, however, might radically change the picture presented here.

The 1958 NEWS residential survey in Wichita represents a sharp departure from the previous NEWS surveys in that considerable more information about these firm's activities in other than residential cooling has been obtained.

Listed in the accompanying table, for example, is each firm's sales of residential cooling to builders of new homes, buyers of new homes, and existing homes; sales of residential heating to new homes and existing homes; sales of both commercial cooling and heating, and a breakdown of each firm's dollar volume between residential cooling or heating and commercial cooling or heating, and other activities.

Additional data on makes of equipment, where the dealers get their equipment, type of advertising and promotion employed, and sales methods will be outlined in the text since this type of data does not lend itself readily to presentation in tabular form.

Sales Up for 4

Of the four contractors showing gains in residential air conditioning sales in 1958, two are comparative newcomers whose sales could be expected to gain as the organizations develop. A third noted some improvement as the direct result of an attempt at cold canvassing and specialty selling.

The combined gains of these four firms, however, were considerably more than offset by the combined losses in sales of the other 10 contractors.

A total of 243 residential air conditioning systems were sold to speculative builders. This represents 31% of the total. (No breakdown of the 33 units listed for Contractor No. 9 is available, so percentages are figured on the basis of 792 total units.)

Sixty-seven units or 8% of the total were installed in new homes at the option of the owner or buyer.

Existing homes were the big market in Wichita in 1958, the 482 such installations representing 61% of the total.

In 1957 existing homes provided 48% of the sales, speculative builders 31%, and owners of new homes 21%.

Besides their residential air conditioning jobs, these 14 contractors also put in a combined total of 2,036 residential heating systems. Of this total 1,627 went into new homes while 409 were in existing homes.

Seven contractors said their residential heating sales were running ahead of 1957; five said their sales were down from last year, and two firms figure their sales are about the same as in 1957.

Eleven of the 14 leading residential air conditioning contractors in Wichita are also active to a varying degree in commercial air conditioning and heating, as the accompanying tabulation shows.

Eight of the 11 contractors also indicated their sales in the commercial field were running ahead of 1957; two were down; one was about the same. As stated previously, however, the gains of these dealers may or may not be representative of the over-all 1958 commercial picture in Wichita.

Where Contractors Get Dollar Volume

Of special interest is the breakdown indicating what percentage of dollar volume these contractors gain from residential and commercial air conditioning and heating. This information was made available by 12 of the 14 contractors, the remaining two being unable to determine it readily.

Only one of the 12 contractors indicated his activities were limited strictly to the residential field. Firm No. 5 listed 23% of his dollar volume coming from residential air conditioning and 77% from residential heating.

Percentage of dollar volume attributed to the different classifications varied widely among the contractors in question. Residential air conditioning ranged from 10% to 70%; residential heating from 5% to 77%; commercial air conditioning from zero to 25%; commercial heating from zero to 16% (two contractors, however, were forced to lump their residential and commercial activities); other sources of dollar volume ranged

(Concluded on next page)

How Wichita Residential Contractors Fared In 1958

(Based on Sales Through Oct. 18)

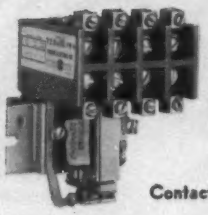
Contractor	1958 Total	Residential Cooling — New Homes — Bldr.	Buyer	Exist.	Residential Heating New	Exist.	Commercial Cool.	Htg.	Percentage of Dollar Volume — Residential Cool.	Htg.	Commercial Cool.	Htg.	Other
1	142*	52	19	71	165*	47*	61†	68†	31%	28%	25%	16%	.....
2	131*	65	....	66	457*	50*	14†	14†	30%	50%	12%	8%	.....
3	115†	10	15	90	80†	51†	45†	69†	65%	12%	15%	6%	2%
4	80†	....	8	72	8†	10†	‡	‡	—20%—		—75%—		5%
5	75†	30	5	40	500	125	....	....	23%	77%	.....	.....	.....
6	47*	20	....	27	15†	17†	30†	17†	NA	NA	NA	NA	NA
7	43†	22	8	13	188†	9†	3†	8†	43%	41%	9%	7%	.....
8	37*	....	10	27	7*	21*	12†	4*	60%	10%	25%	5%	.....
9	33*	NA	NA	NA	....	15*	3*	....*	NA	NA	NA	NA	NA
10	32*	26	....	6	165†	3*	....	....	60%	30%	.....	.....	10%
11	30*	15	2	13	40†	20†	4§	....	10%	7%	2%	.....	83%
12	28*	2	....	26	2	13†	30†	15†	—25%—		—70%—		5%
13	17*	1	....	16	....	8*	....	....	60%	20%	.....	.....	20%
14	15*	....	....	15	....	20	....*	....*	70%	20%	5%	5%	.....
Total	825	243	67	482	1,627	409	202	195	.....	.....	.....	.....	.....

*Down from 1957. †Up from 1957. ‡Total 1,600 tons, up from 1957; many of these also include heating. §Year-round.

FURNAS ELECTRIC CONTROLS for EASY INSTALLATION— BETTER OPERATION...

Magnetic Starters in 10 choices up to 100 horsepower. Furnas Starters for control of compressors offer the exclusive Furnas "in-between" size starters with dual voltage magnet coils. Constructed of the best material, these controls assure long, trouble-free operating life.

Magnetic Starters

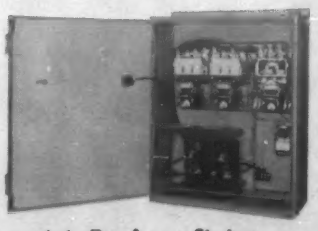


Furnas contactors feature 20, 30, 35, 40 and 50 ampere sizes to match starter requirements. Silver cadmium oxide contacts for longer life. Floating armature insures quiet operation.

Contactors

Step or Cushion Starting permits the use of larger motors by limiting the in-rush current on starting. These methods reduce or completely eliminate objectionable line disturbances due to full voltage across-the-line starting. Furnas Electric offers a complete line of Increment, Auto Transformer and Resistance-type Step Starters.

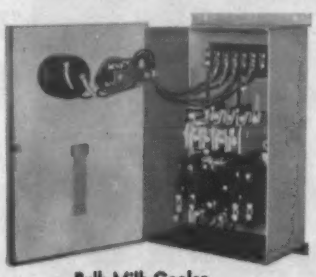
Increment Starters



Auto Transformer Starters

Special Controls

Control panels for special applications such as Bulk Milk Coolers and Air Conditioning group all controls to simplify wiring and provide a single compact unit. Let us help you solve your special control panel problems.



Bulk Milk Cooler Control Panel

For full information on our entire line of Air Conditioning and Refrigeration Controls, write for Bulletin 5610, 1111 McKee Street, Batavia, Illinois. A45

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

1958 Wichita Residential Picture--

(Concluded from preceding page)

from zero to 83%.

Various conclusions can be drawn from a study of these figures. Most obvious is that with one exception all these contractors are active in something besides residential although in most instances the residential field supplies the greater percentage of dollar volume.

Three exceptions to the above are noted in tabulation, however. Contractor No. 4 gets 75% of his dollar volume from commercial; Contractor No. 12 gets 70% from commercial; and Contractor No. 11 gets 83% from other activities, which happens to be plumbing in this instance.

In the Wichita survey an attempt was also made to learn whether contractors maintained any stock of equipment purchased in advance of sale, and also where they obtained the equipment.

8 Stock Equipment

Eight firms indicated they normally maintain such stock while six firms said they do not. The eight who do stock equipment accounted for 580 residential air conditioning installations; the six who do not stock equipment had a combined total of 245 such installations.

No doubt the busiest firms find certain advantages in stocking equipment such as faster delivery and possibly some savings in price, both of which might contribute to their better sales record. Capital available for such investment in equipment, though, would have a bearing on the matter.

6 Firms Buy Direct

On the question of where they obtain their equipment, eight contractors said they get it from franchised distributors and six buy direct from manufacturers. (Although this 8-to-6 ratio is the same as that for stocking and non-stocking dealers, the lineup of firms is different.)

The eight who buy from distributors had a combined total of 429 residential air conditioning jobs; the six who buy direct from manufacturers had 396.

These 14 dealers generally follow the same buying policy for all four classifications of equipment listed in this study, i.e., residential cooling and heating, commercial cooling and heating.

One contractor who normally obtains equipment through a franchised distributor did buy some commercial air conditioning direct from the manufacturer and some commercial heating equipment from an independent wholesaler.

Advertising and promotion methods employed by these 14 contractors covered a fairly wide range, the survey discloses. All 14, as would be expected, advertised in the yellow pages of the telephone directory to a greater or less degree, and most had their names listed under various classifications.

Eleven used newspaper advertising.

Seven employed television spot announcements.

Three used radio spots.

Three used direct mail.

Two used billboards.

Builder magazine advertising, truck advertising, home shows, and contests for salesmen were each mentioned once.

All the contractors used more than one form of advertising, of course.

An attempt was also made in this 1958 Wichita survey to learn how contractors made their sales. The answers to this question were varied, perhaps incomplete, and would probably defy analysis. The comments of the contractors could prove interesting if not conclusive, however:

How They Make Sales

Contractor No. 1: "Hard work. Direct calls. Calling on all builders all the time."

Contractor No. 2: "Salesmen. Personal contact. Builders."

Contractor No. 3: "Direct sales contact with the ultimate consumer."

Contractor No. 4: "Primarily canvassing."

Contractor No. 5: "By personal calls made on prospects secured through local newspaper advertising, store traffic, and reputation of our company because of having been in business for many years in Wichita."

Contractor No. 6: "Sales engineer contacts and bids.

Contractor No. 7: "By direct contact with dealers and builders."

Contractor No. 8: "Direct contact, inspection, proposals, call-backs."

Contractor No. 9: "Direct contact."

Contractor No. 10: "Salesmen, personal contact."

Contractor No. 11: "Haven't really tried very hard."

Contractor No. 12: "Direct selling by salesmen; negotiations (design and sell); negotiate on plans and specifications; bid contract per plans and specification."

Contractor No. 13: "Personal contact."

Contractor No. 14: "75% through service contacts; 25% through advertising."

Judging by the comments, personal contact and direct selling were essential for these sales.

20 Brands Involved

A check on the brands of equipment involved reveals a total of 20 different makes for the four general categories of installations handled by these 14 contractors.

There were 12 different makes listed for residential air conditioning; 16 for residential heating; 11 for commercial air conditioning, and 12 for commercial heating.

Nine different makes were listed in all four of the above groups.

The fact that only 12 different makes are listed for residential air conditioning as compared with 26 different makes listed in the 1957 Wichita survey should not be interpreted as indicating any sharp general reduction in number of manufacturers in the field.

As previously mentioned, the 1958 survey covers 14 contractors doing an estimated 75% of the residential air conditioning business in Wichita while the 1957 survey listed 38 different contractors representing virtually 100% of the business. Numerous makes of equipment are installed in limited numbers, judging by previous NEWS surveys, and usually by the smaller dealers. These makes, therefore, should not be expected to turn up in a survey concentrating on the most active contractors.

An attempt was made also in the 1958 survey to obtain some data about the type of systems installed for residential heating as well as commercial air conditioning and heating, it being assumed that virtually all residential air conditioning installations would be air cooled. The results of this attempt may be inconclusive, but they are of some interest.

Only three heat pump installations for residences were reported by these 14 dealers, but at least one contractor expects the heat pump to boom in the near future.

There were five residential hot water heating systems noted and an indeterminate number of space heaters and floor furnaces, but by far the great majority of systems were forced warm air.

Of the commercial heating jobs 180 were forced warm air, nine were hot water, and six were steam. No heat pumps were listed by these contractors.

In commercial air conditioning applications the belief that there is a sharp trend to air-cooled equipment seems to be borne out in Wichita. There were 139 air-cooled jobs compared with 63 water-cooled systems installed by these contractors.

Seven jobs were noted as being chilled water systems while 162 were listed as direct expansion.

It probably should be repeated here that the above figures on commercial air conditioning and heating do not necessarily represent the true picture in Wichita because big mechanical contractors were not contacted, the survey being primarily directed at residential air conditioning contractors.

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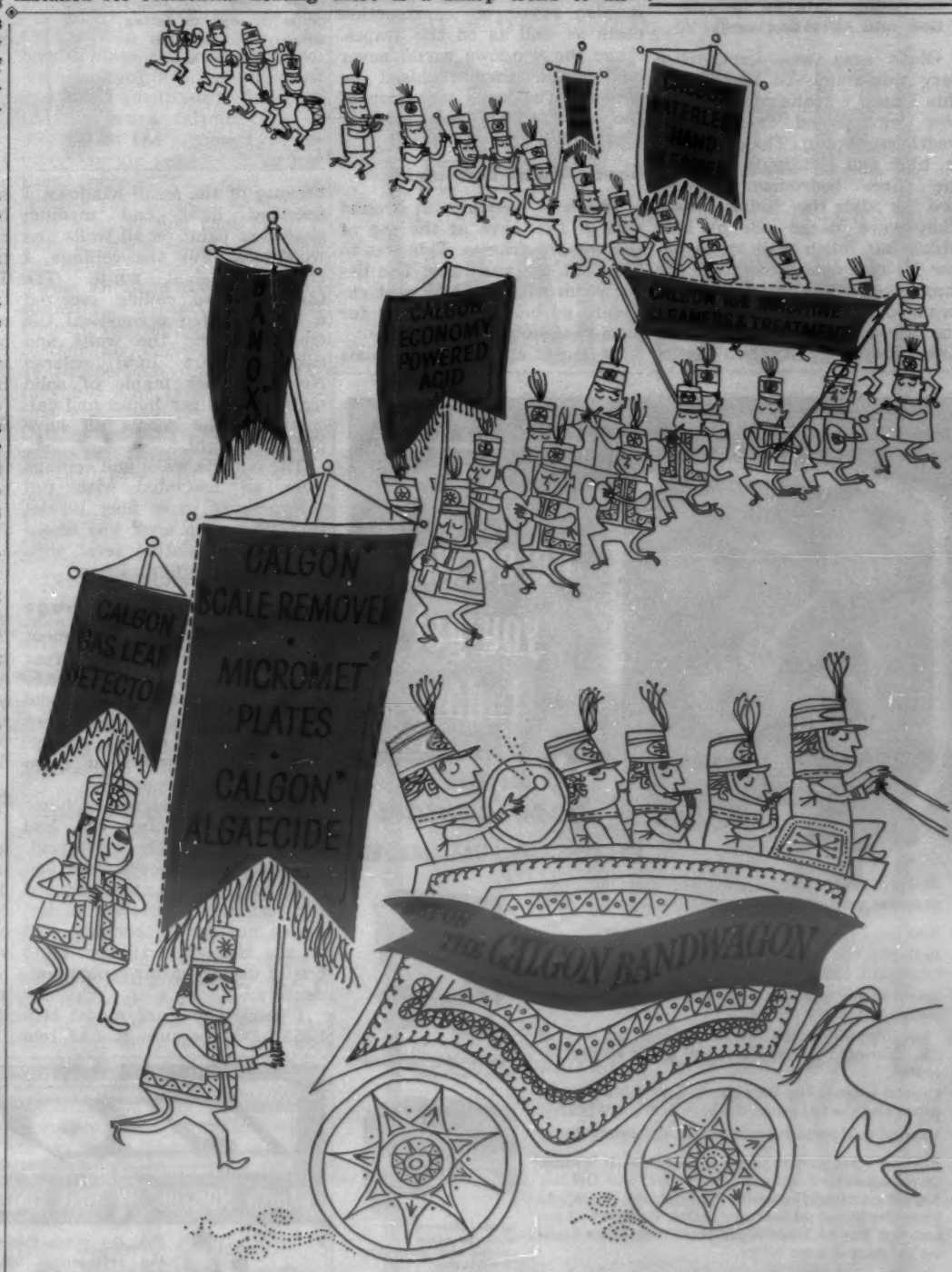

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The Consulting Engineer's Column

Aim of this column is to present information of particular and current interest to Consulting Engineers, and those active in application engineering work generally. The editors invite contributions to the column from all who are engaged in such activity.

By Joe H. English, Abilene, Texas

How a Consulting Engineer Air Conditioned His Own Home

Editor's Note: How would a consulting engineer who has also spent 10 years as an air conditioning contractor approach the problem of designing a home and a system for year-round air conditioning if he were going to live in and with it, not to mention paying for it himself?

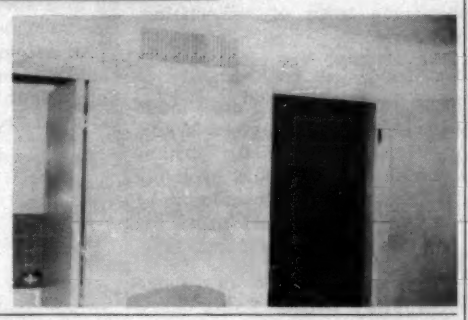
Joe English here describes what he did back in 1954, and also comes up with some interesting data on installation and operating costs.

Glass area was kept to a very minimum. To accomplish this I used a transom type window with wood frames and weatherstripping. They were 18 in. high and 3 ft. wide. Each of the three bedrooms received two as did the living room. They were placed side by side which left much wall space below for convenient furniture arrangement. The kitchen took two also, but they were mounted one above the other over the sink. Each of the two baths took one such window.

By the side of the front door was an area of fluted glass 18 in. wide by 6 ft. high. The only other glass in the house was in the family room opening out on to the terrace. It was a sliding glass door along with a fixed glass area the same size as the door. The total size was 6 ft. 8 in. high by 5 ft. 6 in. wide.

This was, I felt, the very minimum of glass possible, but it also saved on construction costs as well as on the drapes. Since the windows would never be opened, they required no screens. The same was true of the doors. This was another nice saving.

YEAR-ROUND system permits savings in construction by eliminating many windows. Note exterior wall at top left and the wall in the master bedroom. Mural makes room seem large despite fact that only two small windows are in this room. Grilles in outside walls at right are for equipment room.



HIGH inside wall supply grilles as well as ceiling diffusers are employed in the English home.

Shade, Paint Treatment

The roof was hip all around with a 3-ft. eave at the top of the window frames. This was to keep out the sun rays. The living room windows had west exposure so on them I called for Kool-shade screens.

To guard against dark rooms because of the small windows, I specified light and medium shades of paint on all walls and woodwork. For the ceilings, I chose egg-shell white. The family-kitchen ceiling received a light colored accoustical tile treatment and the walls and cabinets were light colored Northern rock maple of solid material. As per hopes and calculations, the rooms all have plenty of light.

The outside walls and ceilings were all insulated with full thickness of glass fiber insulation. The attic area was blown with the insulation level with the top of the 6-in. joists.

Equipment Room in Garage

We designed the equipment room to be located in the rear of the attached garage next to the kitchen. Closets and tool storage occupied the other area along the rear of the garage. A 4 by 7-ft. equipment room proved to be adequate.

I had now designed a home for air conditioning, but had not yet selected the equipment. Air-cooled condensers were just beginning to be manufactured for residential installation, but I was not yet thoroughly sold on the idea. Nevertheless, I did finally decide on air-cooled condensers.

I chose the York model HC-S353A-D30 because it had two separate systems which were two 1½-hp. units tandem mounted in one cabinet and one two-circuit, duct-mounted coil. The thermostat was a T830B for controlling two cooling units with a small differential. Only one unit runs unless you need more cooling, in which case, both units will run.

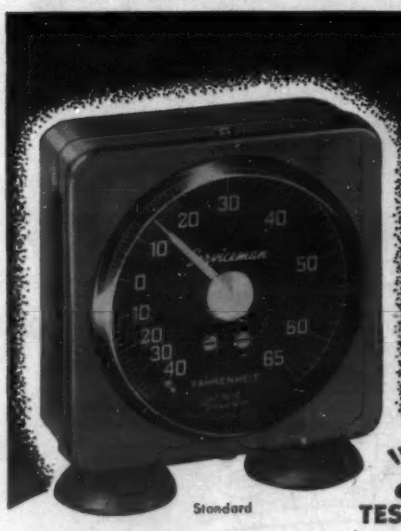
This idea appealed to me for several reasons; but the main reason was to maintain an even indoor temperature, and this has certainly been the case. Hermetically sealed refrigeration systems also influenced my selection of equipment for a trouble-free system.

A carefully prepared heat gain calculation revealed to me that this unit would cool my proposed new home even when our west Texas temperature soared to 103°, which is our design temperature. The house proper has over 1,400 sq. ft. of floor space.

Heating System Design

For heating and air movement, I selected a Mueller furnace model No. 114-110, gas fired. This furnace was noted for its quietness and for its capability of handling a large volume of air with its large blower. I needed 1,200 c.f.m. and this furnace could deliver it.

(Concluded on next page)



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- Internal stop protects against excessive temperatures.

Today's "Serviceman" tests to 40 below. It is made in two models: Standard type (above) and DeLuxe 3-scale type (right) showing Refrigerant -12 and -22 pressures in two added color scales. We haven't been satisfied just to make it the best thing of its kind; we've made it even better.

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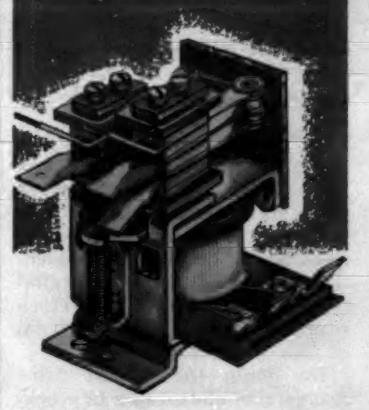

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(Concluded from preceding page)

To have an even temperature in the winter, I installed a Levelizer with the furnace. The Levelizer duct controller is a gas pressure regulator installed in the gas line and is regulated by a sensing element located in the return air. It varies the height of the gas flame to meet the heating requirements. On the coldest days, the flame is near its maximum; and on an average winter day the flame stays very small and burns all of the time.

On a mild day when little or no heat is needed, the thermostat shuts off the solenoid gas valve. It is only in mild weather in the winter that the thermostat operates. When it opens the gas valve, the burner comes on with normal height flame; but the Levelizer then lowers the height as needed.

Fan Runs All the Time

Since the thermostat is used only as a cut-out on mild days, I removed the heat anticipating element in the thermostat. I do not use a fan controller, but let the fan run all the time.

Since I was my own contractor for all of the work and had my own sheet metal shop, I was able to put in the ideal ductwork. The duct is sized for a maximum velocity of 500 f.p.m. This enabled me to use a ¼-hp. fan motor instead of the usual ⅓ hp.

The supply duct is lined with glass fiber accoustical insulation of 1-in. thickness from the top of the furnace to the cooling coils in the attic, about 15 ft. The vinyl sprayed side is next to the air stream. All of the seams and joints of the overhead supply duct located in the attic are taped with asbestos tape applied with wheat paste mixed with silicone and water.

All of the supply boots dropping down from the attic and serving each of the three bedrooms and two baths are located in the tops of closets and are not squeezed down in the walls, which would have necessitated cutting the wall plates.

The supply boot to the high sidewall grille serving the entry area also drops down from the attic into the top of the coat closet. By doing this, the low velocity was maintained in all of the ductwork. Ceiling outlets are used in the living room, family room, and kitchen.

The supply ductwork in the attic is well insulated by first applying a 2-in. blanket type of glass fiber with a heavy paper backing. At all seams and joints, the insulation is trimmed back 2 in. under the paper's edge and butted. The paper flaps are lapped, stapled, and taped for a good vapor seal.

Next, on top of this, I applied another 2-in. layer of blanket type insulation. This was balsam wool wired in place with 6-in. lap joints. A hip roof attic gets mighty hot, so I installed a ventilation screen every 8 ft. under the eave.

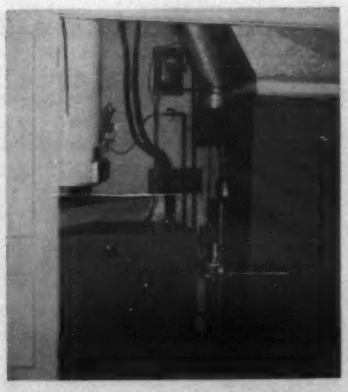
In order to have warm floors in the winter, I used an underfloor crawl space plenum return air system. The return air grilles are all located just above the baseboard in the outside walls using the between-stud space with a 2 by 4 header at the top of the grille.

The plates were cut out between studs at each grille and the sills beveled. The continuous foundation footings were buried an extra 6 in. deeper to keep the crawl space dry and air tight.

Use of Crawl Space

In my previous house I had installed a heating system with very good results, using the underfloor crawl space as a supply plenum. I enjoyed this system for four heating seasons and was sold on the idea of using the crawl space as a plenum, but, since I was now installing both heating and cooling, I though I would be better satisfied using this space for the return instead of supply.

I am now sure that I made the right decision. The return air grilles are all 16 by 6 pressed face grilles and are screwed through the sheetrock walls into the studs.



EQUIPMENT room houses air-cooled conditioner, gas furnace, and water heater.

The corner space under the kitchen cabinet counter is of little use, so this space was used for the air return from under the floor to the equipment room. The opening in the floor was screened with ¼-in. hail screen.

The return air duct in the equipment room contains the filter rack. The filters are the electrostatic type with fine plastic fibers and stainless steel frames. They are very efficient and I was surprised to find that they collect a talcum type of dust. With the plenum type return, the air velocity is so low that very little dust ever reaches the filters. I have been very glad to find that twice a year is often enough to clean the filters.

Just ahead of the filters I installed a 15-watt germicidal lamp in the return air duct for further air purification. I had an independent testing laboratory test this type of installation and their reports showed that practically all airborne germs and viruses are destroyed by the ultra-violet rays of the lamp. The lamp burns continuously and I replace the lamp each year for maximum efficiency.

The respiratory infections in my family have been negligible since making this installation over three years ago.

Outside Air Duct

Since one wall of the equipment room is an outside wall, I had no trouble supplying combustion air and outside air to the system. The outside air duct contains a damper with a quadrant for adjustment. Canvas connections are installed at the furnace connections. The supply connection is an asbestos one.

For additional quietness, the furnace is sitting on a piece of ¾-in. asphalt-coated celotex building board which is on the concrete slab floor.

The hot water heater is installed directly above the air conditioner and is vented into the Metalbestos flue from the furnace. The only gas connections are in the equipment room to the water heater and furnace. For supplementary heat in the bathrooms, infrared heat lamps are installed in the ceilings.

High Sidewall Grilles

For draft-free air distribution, I selected Model MA high sidewall supply grilles set at 5° up and Model JS ceiling outlets. The face velocity is less than 300 f.p.m. and the throw is excellent.

This system could not be more trouble-free. The only maintenance required since installation over three years ago is to clean the filters and oil the bearings twice during the year.

The fan never stops except for the oiling every six months. On the thermostat is a heat-cool switch, and this is the only reason that the thermostat is ever touched because we never vary the temperature at any time. We like 75° for year-round comfort, and we have exactly this at all times with no variation at any spot. You cannot detect the cycling of the equipment with its modulation feature.

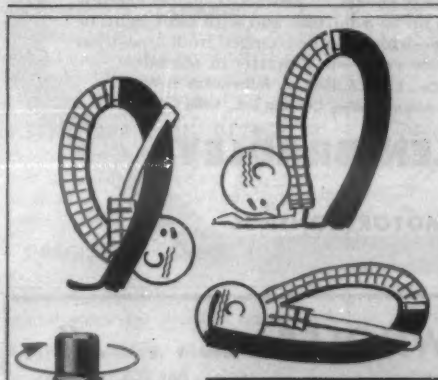
We have many electric appliances such as a washer-dryer, dishwasher, oven, burners, bathroom heaters, etc., as well as two TV sets and 150-watt light fixtures. Therefore, in the winter our electric utility bill averages about $20 per month.

Our highest electric bill in the summer is less than $52 a month, so our cooling costs us less than $32 on the hottest months. Our electricity costs us $14.30 for the first 500 kwh. and 1.8 cents per kwh. for all over 500 kwh.

In the summer, our gas bill averages $2.50 per month for the water heater and the furnace pilot. For the coldest winter months, the gas bill has run as high as $11.35 per month. Our gas rate is 57½ cents per 1,000 cu. ft. For the great comfort that we receive, these costs are very reasonable.

This system does everything which I set out to accomplish. It is service-free, economical, and always ready to either cool or heat as required. There is no objectionable movement of air at any time. There is no stratification of layers of air of different temperatures. The floors are warm in the winter and no warm strata of air on the ceilings.

I find that I do not need a humidifier because the air does not become excessively dry in winter.



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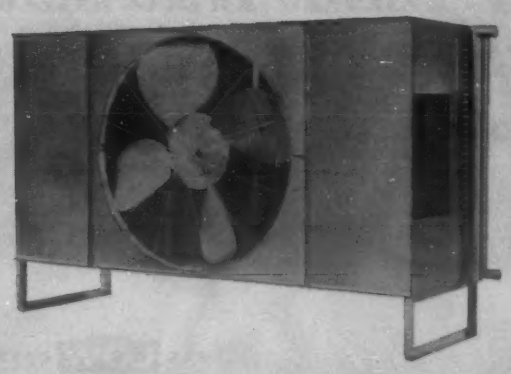

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Knoxville Residential Sales Rise, Heat Pump Demand Is Dominant Factor In '58

By George M. Hanning

KNOXVILLE, Tenn. — Residential air conditioning chalked up a pretty good year in Knoxville, a sampling of nine contractors and two distributors here indicates.

The 11 firms surveyed accounted for the majority of residential air conditioning sales so far this year in this area, it is believed.

Late information received from two other contractors shows that they and the firms represented in this sampling together sold more residential air conditioning than did all contractors and distributors covered in 1957's complete survey.

Five of the nine contractors reported to the NEWS that their sales were higher than last year. Two said sales were about the same. Two who were only half-heartedly in the residential market reported fewer sales than in 1957.

Yet, as is shown in the accompanying table, the two distributors sold more units (200) to builders than all nine contractors sold to all their customers (152). They were the only two distributors in the city who admitted selling units other than through dealers.

Distributor A enthusiastically declared that his residential sales — all heat pumps — more than doubled those of last year. Distributor B said his sales were less than in 1957.

A third distributor disgustedly commented that he received three units this year. One was put on display, one went into his own home, and the third was shipped by mistake.

Demand for the heat pump was a dominant factor in residential air conditioning sales this year. Distributor A found it in abundance. He sold 150 units. Four of the nine contractors sold heat pumps, a total of 42 units. This was 27% of the 152 air conditioning units sold by all nine contractors.

Contractor No. 2 sold 28 residential units, 24 of them heat pumps. Contractor No. 1 sold 10 heat pumps, contractor No. 3 sold five, and contractor No. 4 sold three.

Heat pumps sell so well in this area because TVA utilities are especially interested in them as a builder of even summer-winter loads, one distributor explained.

He pointed out that electric heat is so predominant here due to low TVA power rates that utilities are promoting cooling to help get their power demand valleys in the summer over 50% of their peak months. They must do this to keep their power costs down.

Heat pumps are particularly attractive because they require less kilowatts for heating than resistance heaters, thus cutting down the peaks as well as filling in the valleys, he said.

The two distributors sold all of their 200 air conditioning units to builders. The contractors sold only 34 units to builders and 29 to owners of new homes. They sold 89 units to owners of existing homes.

None of the distributors or contractors surveyed, it can be seen from the table, are primarily in the residential air conditioning business. Even the distributor who dominates the group attributes only 6% of his dollar volume to residential cooling.

Only one contractor derives as much as 25% of his volume from home cooling. Contractor No. 2 draws a goodly percentage of his dollar volume from residential cooling, although he does not know what percentage it is.

For all others, residential air conditioning is very much a sideline. Two contractors have their major activities in the plumbing field. One primarily

(Concluded on next page)

How Knoxville Residential Contractors Fared In 1958

(Based on Sales Through Oct. 11)

Contractor	—Residential Cooling— 1958 Total	–New Homes– Bldr.	Buyer	Exist.	Residential Heating New	Exist.	Commercial Cool.	Htg.	—Percentage of Dollar Volume— Residential Cool.	Htg.	Commercial Cool.	Htg.	Other
1	60	15	....	45	45†	80†	265§	20	25%	30%	30%	15%	.....
2	28†	9	14	5	20†	6†	14†	8†	NA	NA	NA	NA	.....
3	19	8	10	1	13*	18*	4*	....	NA	NA	NA	NA	.....
4	15†	....	1	14	2†	15†	19†	15†	10%	10%	25%	5%	50%
5	10†	....	....	10	1	24	6†	4	5%	5%	5%	5%	80%
6	8*	2	....	6	12	50	3*	....	NA	NA	NA	NA	.....
7	6†	....	3	3	6	9	7†	10	5%	15%	10%	10%	60%
8	5†	....	1	4	....	....	8†	....	3%	.....	6%	.....	91%
9	1*	....	....	1	2*	8*	....	....	.....	5%	.....	.....	95%
Dist.													
A	150†	150	....	....	150	....	....	....	6%	.....	.....	.....	94%
B	50*	50	....	....	....	....	....	....	.....	.....	.....	.....	.....
Total	352	234	29	89	251	210	61	57	.....	.....	.....	.....	.....

***Down from 1957. †Up from 1957. §In tons of cooling, not units. Residential heat pumps are figured as both one cooling unit and one heating unit in this table.**

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Dover "Packaged" Cooling Towers Join Famous Pritchard Line

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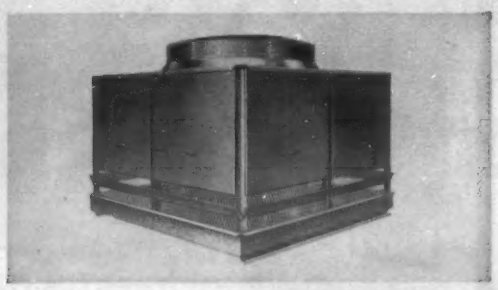

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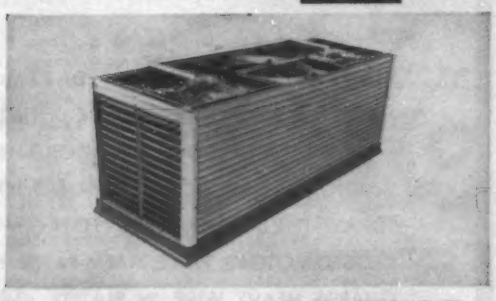

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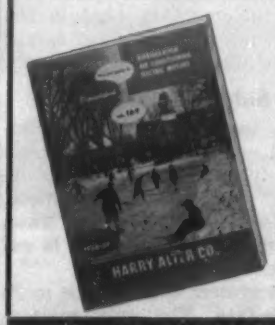

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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

Knoxville Residential Sales Up--

(Concluded from preceding page)

does sheet metal fabrication for heating. One is in the conversion burner business, one in appliances, and one in mill and supply.

All but one contractor also sold residential heating. Heating sales, however, accounted for a sizeable percentage of only one contractor's total volume.

Similarly, all but one sold commercial air conditioning equipment. Three of the contractors derive a good share of their volume from that field.

Only five contractors sold commercial heating equipment. It was a sideline for all.

Five contractors sold only a single brand of residential air conditioning equipment. Four, among them the top three contractors, sold two brands. Five sold a single line of commercial air conditioning equipment. One sold two brands and one sold three.

At the same time, the contractors sold from one to five brands of heating equipment.

Five contractors stocked air conditioning equipment in advance of sale and four did not. The top four firms did and the bottom three did not.

Five contractors bought some if not all of their air conditioning equipment—both residential and commercial—direct from the manufacturer. Five purchased it from a franchised distributor and one from an independent wholesaler.

The same five contractors who bought their cooling equipment from a franchised distributor also bought their heating equipment from the same type source.

Two contractors bought residential and commercial heating equipment directly from the manufacturer. One contractor bought his heating equipment from an independent wholesaler.

Bulk of Equipment Was Forced Warm Air

Bulk of residential heating equipment sold by the surveyed group was forced warm air. They sold 232 warm air furnaces, 12 hot water, 15 steam, five floor furnaces, two space heaters, and two electric heat systems. Heat pumps accounted for 192 units, tabulated in the accompanying chart.

The contractors sold 210 heating units to existing homes as compared with 101 to new homes.

As electric heat goes into most homes in the Knoxville area, these contractors do not appear to be strong factors in the local heating picture.

All commercial air conditioning installed by these contractors was of the direct expansion type. Six installed 28 air-cooled units and 25 water-cooled units. A seventh, who kept records only by tonnage, sold 225 tons of water-cooled equipment and 40 tons of air cooled.

The five contractors doing commercial heating work installed 39 forced warm air furnaces, 11 steam boilers, six heat pumps, and one electric heat job.

As might be expected, top volume contractors did the most advertising on residential air conditioning. Bottom three did little or none.

Seven used newspaper advertising and four used television spots. Two supplemented their newspaper advertising with direct mail and one displayed in home shows and used radio. Most had advertisements in the telephone directory.

All Depended on Personal Contacts

All, however, depended on personal contact with the customer to make sales, mainly following up referrals from previous customers. Two attributed some sales to bidding on spec jobs. One said insurance salesmen provided him with leads.

"Most of our sales," one contractor asserted, "come from having been in business for 20 years."

One contractor admitted that he had cut out all promotion on residential air conditioning this year. In previous years he had maintained a booth in the home show and at the county fair and had sent out direct mail.

"We sell less," he commented, "but we make money on what we do sell."

One contractor who is doing a thriving business installing air conditioning for others but sells little on his own, explained his reasoning this way:

"In air conditioning, you can't sell a unit at retail nowadays. So I'm not going to waste my time running money through my books just for the glory of it.

"We have tried to sell the idea that we have the know-how and the desire to do a quality installation job. The sales I make are to people who want a quality installation and are willing to pay to get it."

Clues In 'Mystery Personality' Contest Appear On Fedders' Sign on Broadway

MASPETH, N. Y.—Many eyes in New York's Time Square are turned skyward in search of clues to a four-week contest being run by radio station WABC and Fedders-Quigan Corp.

Called the "Mystery Personality" contest, clues to the identity of some well know individual are given throughout the course of the bradcasting day on the various WABC programs. A bonus clue to each day's personality is placed on the Fedders air conditioner spectacular sign in Times Square and only those who look at the sign get this extra clue.

The sign, located at 47th St. and Broadway, uses 8-ft.-high "running letters" to spell out a continuous commercial message. The clue is run within the usual message and is changed daily.

Listeners to WABC mail their guesses to the station and the one bearing the earliest postmark each day wins a merchandise prize.

A grand prize winner will win a trip to Rio de Janeiro as well as having his "name in lights on Broadway" on the Fedders sign.

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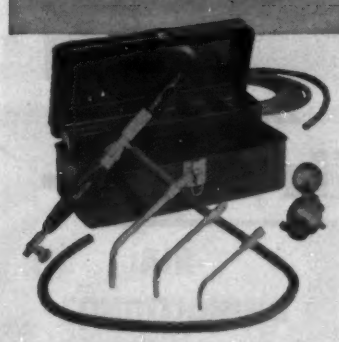

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- It also forms inert complexes with certain metallic ions in water such as; iron, copper, nickel, manganese and zinc.
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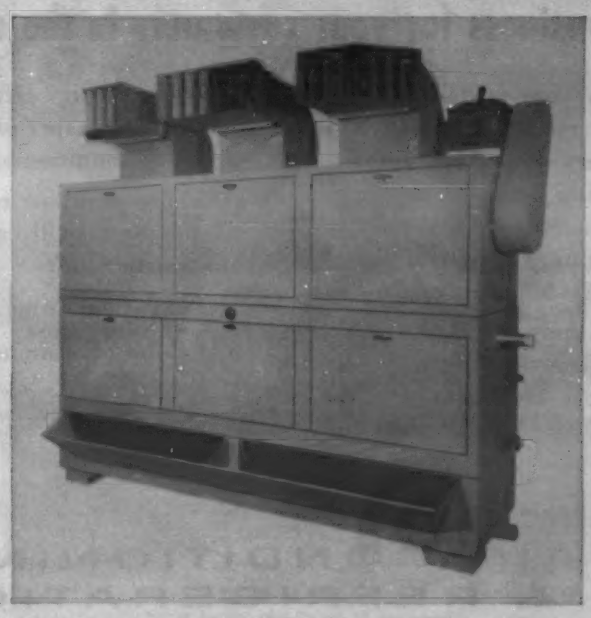

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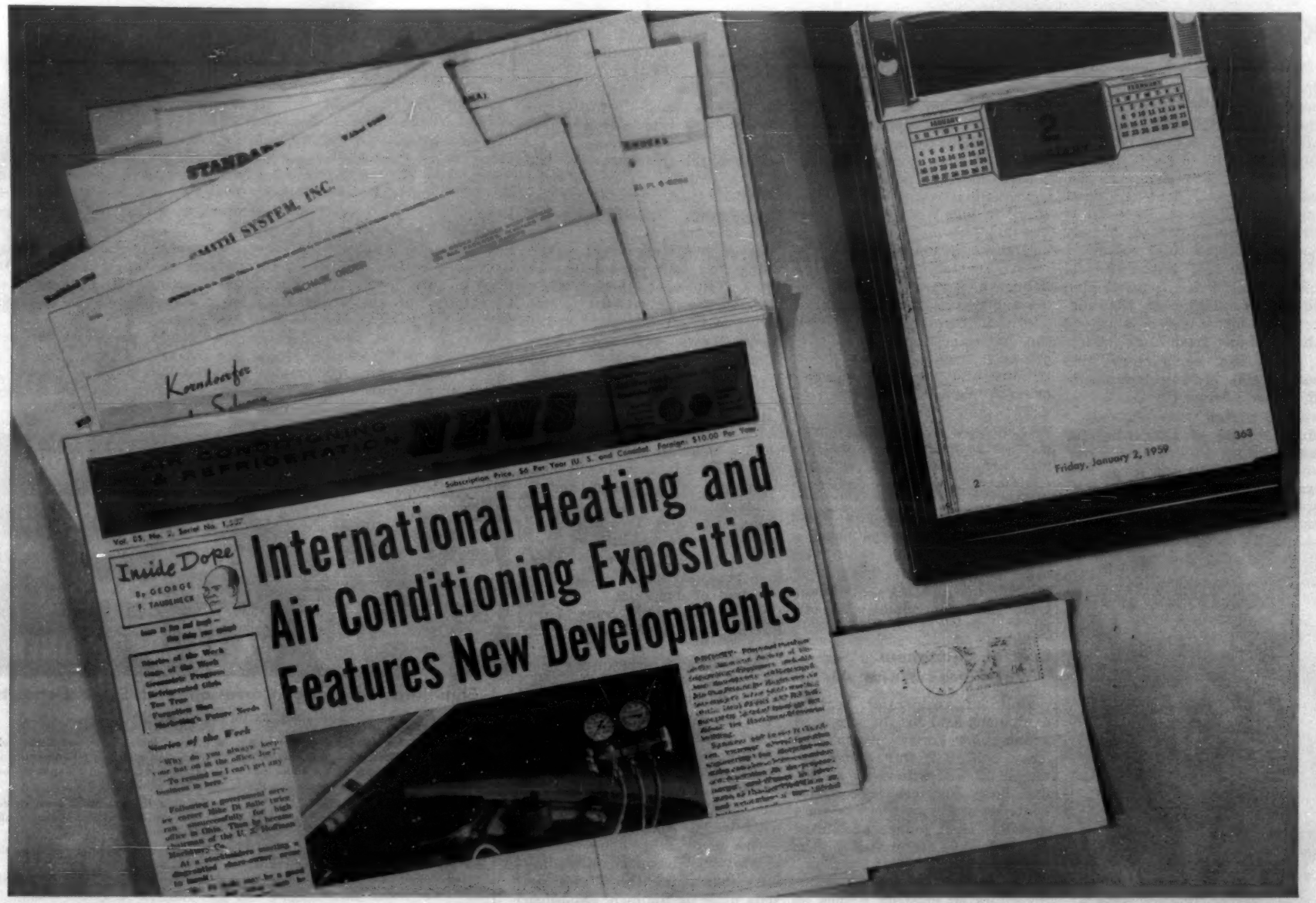

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Big special pre-show issue will be the first order of business for your customers in the new year

When your customers and prospects return to their desks on January 2, paramount in their thinking will be the big 14th International Heating & Air Conditioning Exposition to be held in Philadelphia, Jan. 26-29, 1959.

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Air Distribution Requirements In Year-Round Air Conditioning

Part 3—Fundamentals of Equipment

By Frank D. Klein, Chief Engineer, Governair Corp.

Modern hermetic compressors of the large type under discussion vary little in construction features from the open-type. Of course, the electric motor is enclosed and suction gas cooled, otherwise they are mechanically similar to the description given in the foregoing.

Because, however, the electric motor is totally enclosed and subject to the refrigerant-oil mixtures brought in contact with its windings, the hermetic type is vitally affected by chemically unstable refrigerant mixtures. Discharge temperatures must be kept within the proper and moderate ranges in order to limit the compressors total heat in operation.

Therefore, the hermetic's mechanical and electrical stability must be controlled as well as the chemical stability of the refrigeration system; instability of each will lead to the instability and breakdown of the other.

WHAT EFFECT DOES HEAT HAVE ON THE HERMETIC?

While "copper-plating" is not peculiar to hermetics (it happens in open types as well), observance of its occurrence is more serious than in open-type compressors.

Heat in the presence of contaminants in the refrigerant-oil mixture is one of the greatest contributors to compressor breakdown. Both the nature and rate of a chemical reaction are aided and abetted by Heat.

The extent and rate of deteriorating effect can be easily demonstrated by using a test tube or some other likely container, putting into it a quantity of Refrigerant-12, some crankcase oil, two strips of clean steel, two strips of bright copper, then adding a few drops of water, and sealing the tube. Place the tube over a Bunsen Burner or other source of heat and observe the "copper-plating" that takes place on the steel strips after a short while.

The higher the temperature the greater rate of the reaction. While the plating reaction in itself might not be immediately harmful, the reaction indicates, when observed in an actual compressor, potential and serious trouble.

Corrosive substances, such as moisture, air acids, and metal salts, have a definite and serious effect on the metals structure of a compressor, especially that of the field demountable hermetic type.

The chemical stability of the refrigerant composite being used in a Hermetic is important to its operation and life. High operating temperatures, when accompanied with contamination in the refrigerant such as water, etc., will lead to both refrigerant-oil breakdown or "cracking" as the chemists speak of it, the forming of acid which will react on both metals and motor windings. This leads to the so-called "acid-sludge" which curtails both life and operating efficiency of the Hermetic compressor.

Heat, therefore, must be combatted to successfully maintain today's modern Hermetic compressor; furthermore, contaminants must be controlled and eliminated. Thus moderate to low condensing temperatures must be the order of the day as must motor temperatures.

PROPER SELECTION OF THE COMPRESSOR IS NECESSARY

Whether of the hermetic or open type, each model and type of compressor, however standard to the manufacturer, is NOT all things to ALL circumstances. Judgment must be used when selecting a compressor to do the particular job.

Selection of a compressor should be done on the basis of its "suitability for the purposes," not selected on the basis of its total capacity only. The applications engineer or applicator should evaluate his selection on four primary points:

1. The ability of the compressor to function and produce its rated capacity under his particular operating conditions.

2. The ultimate life durability under the circumstances of application.

3. The ability to replace parts and repair the compressor in the field when the necessity arises.

4. The adaptability of the compressor, such as physical size.

Technically, selection should be based on:

1. Curved performance data, as observed by the manufacturer under dynamometer tests.

2. Total Volumetric Efficiency of the compressor as exhibited under test at conditions similar to that to be encountered in the circumstances of application.

3. Characteristic Heats of Friction, exhibited under manufacturers tests under circumstances similar to those of immediate application. Particularly necessary at variable speeds of rotation (open type).

4. Suction Superheat conditions similar to those of immediate application.

5. Condensing Temperature to be maintained under the circumstances of application.

(To Be Continued)

Factory Seal Shows If 'Freon' Cylinder Has Been Tampered With

WILMINGTON, Del. — Gold-colored hood caps and factory-sealed polyethylene valve covers now are being used as a quick, easy identification of cylinders of "Freon" refrigerants which have been unopened since passing a strict manufacturing quality test, du Pont's "Freon" Products Div. has recently announced.

"If the heat-sealed plastic cover over the gas discharge valve is intact," explained J. C. Hoopes, refrigerant field distribution sales manager, "you can be sure that there's been no tampering with the cylinder and that you're getting the same high quality material that was sealed in the container at the factory."

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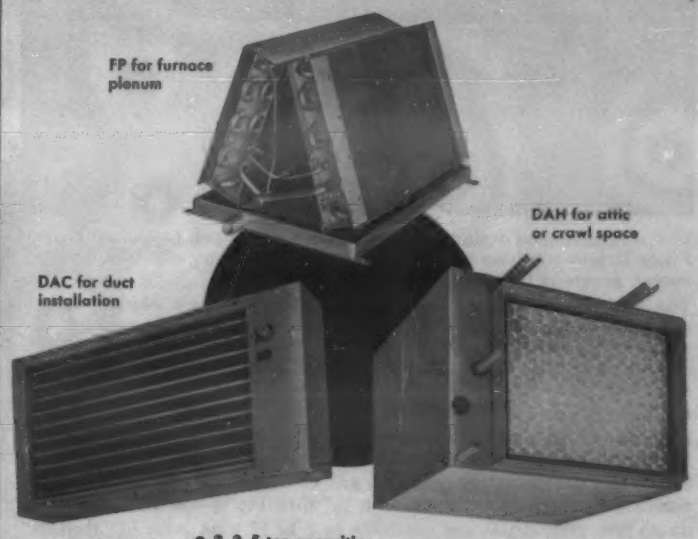

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Wet Heat, Electric Heat, Hot Air

Recently, I sat at a luncheon table with several heating and cooling contractors, engineers, and manufacturers. The conversation turned to the relative merits of wet, electric, and hot air heating, and the discussion so pinpointed the opinions in the field that I have abstracted key portions of it for this column.

Chief exponents were an East Coast Contractor, a Midwest Contractor, and an executive from a nationally known heating-cooling manufacturer.

Conversation began when East Coast (EC) suggested that the manufacturer, who favors hydronic systems, was hiding his head in the sand. "How can you keep pushing wet heat," asked EC, "when it is so obvious that the trend has never left hot air?"

"Basically," answered the manufacturer, "it's because we definitely believe hydronics are better.

"In our mind, it's a matter of choosing between attempting to heat the air in a structure—leaving the structure itself, cold, or heating the structure and the occupants—with the air being considered only secondarily."

"If you are talking only about radiant panels in the floor and ceiling," offered the Midwest contractor (MW), "your reasoning holds. But it certainly doesn't apply to convectors or fan coil systems used in wet heat."

EC recalled that he had an uncle who was a steam locomotive expert. "When Diesel came, he *stayed* a steam locomotive proponent, and went down singing steam's merits. Whether wet heat systems are better than hot air or not, it seems that hitting hard on one and ignoring the other isn't smart.

"Everything seems to indicate," EC continued, "that the quality house of the immediate future will have air conditioning. That means ducts. So what is more natural than hot air heating?"

"You're forgetting," countered the manufacturer, "that air handling is different in heating and cooling. You need more air and larger ducts for cooling; you want cold air registers high and hot air registers low.

"There's nothing that says we can't go to wet heat and cooling in residences, just like we have wet heat and water chiller systems in commercial and industrial."

At this point MW interrupted with the thought that while the hot air and hydronics boys were fighting it out, electric heat was coming to the fore and seriously challenging conventional heating methods.

"The challenge is no longer just in the Northwest or TVA areas," MW insisted. "Utility companies in areas where electric heat is apparently uneconomical are aggressively and successfully pushing resistance heating, both domestic and commercial."

MW's contracting firm has put in more than 1,000 schools of all sizes. Just now, he illustrated, one school board has given an OK to building two identical schools—one with coal-fired wet heat, the other all electric. "This is an area where the best average kwh. rate is 2.54 cents."

Preliminary estimates on these two schools indicate that operating costs of the electric school will be some 50% higher than the coal wet heat. This is after giving the electric building allowance for space savings and making all adjustments for insulation and plumbing differences in the two buildings.

(*Editor's Note:* The NEWS is aware of another similar experiment—two identical schools one coal-wet heat, the other electric. In this case, the kwh. rate is on the order of 1.75 cents and estimates indicate that over a 20-year period, the electric heating will definitely be cheaper.)

Everybody Involved Interested In Result

"Installed cost of the electric heating will be some $4,000 less on a total installation of about $250,000," offered MW. "Everybody involved is intensely interested in actual results on these two schools, and I mean everybody from the school authorities, through the utility companies to the steamfitters' union."

EC added that in contracting anything like a school, "you can make figures show anything. If you want to favor wet heat, you bury certain figures in one place; if you favor electric, bury them somewhere else.

"On test cases like this it is best to have utility people and others interested sit in on the estimates and cost adjustments. For example, when you go to electric heat, it is customary to allow for the extra room obtained by not having a machine room, stack, and all.

"Capital, write-offs, taxes, and interest on bonds—all these things must be considered."

'Educated Guesses' Can Be Misleading

Too many such comparisons contain educated guesses which can be misleading, according to MW.

"Take a coal-fired system as an example," he said. "A good operator can heat a classroom for a season with 5½ tons of coal; a bum operator can take 10 tons. Now if you want to make wet heat look good take the first figure; if you favor electric heat, take the second. In either case you have an educated guess, since there are case histories either way.

The manufacturer was interested in relative efficiencies of wet heat and electric heat. "Our literature, you know, points out that wet heat systems are over 70% efficient."

Both contractors jumped on this one. "If I were you," one offered, "I'd take that piece of literature out of circulation. Any operator or engineer can show you that, while the boiler itself may operate at 70% efficiency, the entire system more usually operates at 45-50%.

"You have to be realistic about these things."

All the speakers agreed that all sides of the heating industry reach pretty far in attempting to sell their product. Such things as dirt, health, wear on furniture and equipment is stretching it quite a bit, since no long-range tests have been performed.

"One last thing on schools, though," interjected MW, "when it comes to flexibility, electric heat has got a decided advantage. For example, a school building may be on cooling cycle more than heating cycle even on the coldest day of the year. Then one side of a building may call for heat, the other for cooling. Further, night and other part time use of certain rooms is easiest and most efficient with electric heat."

The manufacturer repeated his contention that getting the occupants comfortable is the first duty of heating. It is his feeling that wet heat, especially radiant type, best accomplishes this objective.

EC feels strongly that the future of cooling and heating is such that ducted air systems are the best approach. "It's quite likely," he holds, "that the greater care necessary in handling air for cooling systems will upgrade the admittedly weak work often found in heating by hot air."

MW holds that as a contractor he thinks of heating as *one objective*—with several methods of accomplishing it. He refuses to believe there is a *best* heating method.

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Specialists Take Over

In Southern California, Contractors Also Split Efforts For (1) Tract (2) Custom-Built (3) Existing Home Cooling

The News recently took a quick look at residential air conditioning in one of the nation's fastest-growing markets —southern California. This article describes some of the methods and ideas of those who are actually selling air conditioning to homes in this market, but does not attempt to cover all those who have been successful in this area.

LOS ANGELES—"Good morning," said the Los Angeles hotel telephone operator on what was probably a crisp October day in most of the rest of the U. S., "it is 7 o'clock and the temperature today will be 103°."

That temperature reading, together with records showing that southern California in the past two years has had more 90° days than all but a couple of other states, disproves the contention that "the climate isn't right for cooling" in this area. And it is just one of a number of factors that are encouraging many in the industry to predict that this area may become the No. 1 market for air conditioning—including residential—within a few short years.

Other principal factors involved in this conclusion:

1. Interest among contractors in selling and installing residential systems continues to grow.
2. Builder interest in air conditioning, on the decline for a while, seems to be reviving.
3. A feeling that public interest in year-round conditioning, which hasn't grown at the hoped-for rate, will be accelerated by the intense promotion of air conditioning which the electric and gas utilities are getting underway.
4. The general upgrading of residential construction in the area, which should make for more satisfactory air conditioning installation now and in the future.

Because of some of these factors "a lot of guys who used to sell wall furnaces and evaporative coolers are getting into the year-round residential air conditioning business," says Edward A. Myers, Jr., head of the Carrier distributorship in the Los Angeles area. "Maybe they're still selling those other items, but they also realize that the future is in the central system."

'What Kind' Is a Question

Exactly what kind of residential air conditioning system will predominate in the southern California market is an issue which is coming to the fore right now. The electric utilities are concentrating their promotion on the heat pump. This is said to be a result, in part at least, of the push on gas air conditioning by the gas utilities.

While some of the heat pump adherents think they can wrap up a major portion of the market in a few years, the major part of the business is now going to the conventional residential air conditioning unit (coil, condensing unit, and blower, usually the split system type).

The residential air conditioning market in southern California breaks down generally into three classifications:

1. **Tract (project builder) homes in the medium price range.**
2. **Custom built new homes.**
3. **Existing single dwelling homes.**

As elsewhere, air conditioning contractors complain that pricing conditions in the new tract home market are chaotic, the builders being interested only in the lowest price. However, contractors with able, fast-working installation crews have tackled this market and those who are successful are apparently doing it on a basis of doing a large number of jobs even though the margin may be small.

The custom-built new home in the $25,000-and-up bracket is a favorite with many good contractors. There is generally an opportunity to talk with the buyer, and to sell him a quality installation. The margins are better, and little trouble is encountered in financing the sale.

Like Existing Home Jobs

The existing home market is considered by many contractors to be the most attractive. Generally, there is little competition or "price chiseling" on the individual job. The "third party" in the person of the builder is out of the picture, so that the contractor deals directly with the ultimate buyer and user, and is able to "sell" some of his ideas on how the installation is to be made. Such jobs generally run at a fairly high dollar volume figure, with a high incidence of labor and a good margin. Financing is almost never a problem, many such jobs going for cash.

On the negative side are these considerations: locating prospects for comfort cooling in existing homes is difficult and costly to do by conventional sales and promotion methods. Referrals and follow-up of old customers for whom the firm has done heating or service work, or perhaps commercial work, seems to be the best source of sales.

Existing home jobs many times involve special problems in installation, particularly with respect to running ductwork, and in California may require expert estimating on the loads because of the poor construction in some of the older homes. Also, such jobs may require more "adjustment" after the installation, because the buyers may be older and more "fussy," and also because of the substantial investment that has been made for air conditioning.

Southern California is an area in which many new ideas flourish, and this relates as well to selling and sales promotion ideas. In discussions with some distributors and successful dealers, some plans and ideas came to the fore that could possibly be useful to dealers elsewhere.

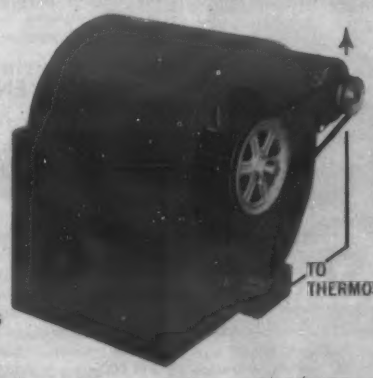
"The first order of business for the contractor who gets a signed contract for air conditioning of an existing home is to take the first steps towards starting the installation—even

(Continued on next page)

Winter or Summer!

Morrison Du-Air Blower Gives EXACT Value CFM for BOTH HEATING & COOLING AUTOMATICALLY

- ELIMINATES HOME OWNER PULLEY CHANGES
- ELIMINATES COMPROMISED AIR DELIVERY
- GIVES MAXIMUM COMFORT FOR HEATING and COOLING



- ELIMINATES TWO SPEED MOTORS
- WORKS AUTOMATICALLY FROM THERMOSTAT CIRCUIT

Merchandise heating COMFORT in the winter, cooling COMFORT in the summer. Actuated by a combination heating-cooling thermostat, any unit equipped with the new Morrison DU-AIR damper control will automatically deliver the exact amount of air for heating or cooling, at a savings or no additional cost to the home owner.

MORRISON PRODUCTS, INC.
16816 Waterloo Road • Cleveland 10, Ohio
Plants in Fort Worth, Texas • Phoenix, Ariz.

CLIP & MAIL TODAY!

Please send me additional information on how to merchandise year-round comfort with DU-AIR

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

Specialists Take Over--

(Continued from preceding page)

if this is only getting some parts onto the buyer's property," says Russ Crotwell, manager of the Lennox Industries, Inc. air conditioning division in Los Angeles.

"A lot of jobs for existing homes are still bought on impulse, and we had one dealer who had firm orders cancelled twice by a woman who changed her mind when the weather turned cooler suddenly. The third time he got the order from her, he rushed back to his place of business, put a condensing unit assembly on his truck, and rushed it out to the buyer's home and put it on her property. That time the sale stuck."

That's one reason for Crotwell's belief a metropolitan distributing point for air conditioning equipment should have ample warehouse space (as the Lennox operation in Los Angeles has). It is helpful in many ways for a dealer to know that on the day he makes the sale, he can pick up the major components for the installation.

For the most part, the medium-size and sometimes the smaller contractor prove most successful in selling central comfort cooling for new custom-built houses and existing homes. The head of the company, and sometimes a salesman or two, who are reasonably well experienced in air conditioning work, do the selling.

They work with architects, builders, mechanical engineers—and users of air conditioning. Users are a source that should be tapped more, Crotwell thinks, because they are almost invariably enthusiastic over having air conditioning, not only because of its many benefits, but also because of a feeling of pride of ownership.

The round-table conference of housewives who use air conditioning, such as Lennox sponsored in Los Angeles earlier this year, was the type of activity that can generate more build-up of leads from users, in addition to developing some publicity and promotional assistance that might not be obtainable in any other way, Crotwell points out.

Big Contractor Specializes

But can a big air conditioning contractor, who has specialized in commercial and industrial work, develop the type of a sales organization that can operate successfully in the residential market also? Crotwell points to a firm in San Diego—long considered a poor market for air conditioning because of its "ideal" climate—which has done just this.

Well known as the University Heating & Air Conditioning Co., in commercial air conditioning work, this contractor decided it would tackle the field of residential air conditioning. First move was to split its sales organization into three departments—new custom-built homes, existing homes, and commercial.

Then it trained salesmen to go out and ring doorbells, backed them up with a lot of local advertising and sales promotion, and has become one of the top residential air conditioning contractors in southern California.

"The word 'training' is the key to eventual broadening of the sales base in the residential field," Crotwell asserts. "That means training in selling, job estimating, installation, and service—this latter is very important because there are a lot of 'wear areas' in air conditioning—and it means continual training effort. That's why our Lennox schools will be the keystone in our '59 plans."

These schools will be open to any contractor who wants to attend, whether he handles the Lennox line or not. "We figure that we will benefit by upgrading any dealer who will take the time to attend the schools, and we are happy to expose them to our products and our plans."

One last piece of advice for a contractor from Crotwell—be a joiner. Even metropolitan areas are generally nothing more than a string of small communities, and the man who is active in local civic affairs and church and fraternal organizations can make the kind of contacts that can result in sales.

The proper kind of an organizational setup in a distributorship, contractors who will set themselves up to sell and install residential comfort cooling in the right way, and training, training, training.

That's the kind of formula that Edward A. Myers, Jr., president, The Prentiss Corp., Carrier Corp. distributor, has been applying to push sales of residential air conditioning.

How Distributor Organizes

Key man in the Prentiss distributing organization is the field salesman. Each field salesman is in substance a field sales manager, responsible for getting satisfactory sales volume out of those dealers whom he contacts, and responsible for all of the distributor's relations with these dealers. It is virtually a requirement that each field salesman have had some contractor experience, and some type of engineering training. The field salesmen have staff assistants who function as technical and product advisors.

The distributor publishes a list of authorized dealers, and states as a matter of policy that he will sell only to these dealers. The dealer in turn is expected to strive for continual upgrading of all of his activities.

In the matter of training, Myers says that his staff is almost always "in the process of training, or being trained." This Fall, his field sales force has been going to an extended night school course.

The Prentiss Corp. extends credit to its dealers rather liberally. But Myers has no particular fear on this score because part of the field salesman's duties is to check his dealers' books and financial condition regularly, and to offer advice and assistance on financial matters. Another function of the field salesmen is to see that the contractors are properly staffed, and they help in "trading" or shifting personnel from one outlet to another.

Formula for Success

What kind of a contractor seems to be most successful in residential comfort cooling work? While it is impossible to depict any one perfect example, Myers says that there is a type of relatively small contractor who does a steady flow of residential work. He is generally a man who has had some experience with a larger contractor, who has some experience in sheet metal or refrigeration, or perhaps both. He must be the type that is willing to learn some of the fundamentals of selling, and of the operations of a small business.

Why can't some type of a strong merchandising setup, such as might come out of the appliance retailing field, make much of a dent in the central residential cooling field? For one thing, some skills in contracting are a definite requirement: someone in the organization must hold a state C-20 license in order for the firm to make the installation, and then banks who may finance the job will deal only with an installing contractor.

Ed Sales, a Pasadena contractor who was once the general manager of a large plumbing and heating contracting firm, is perhaps typical of this type of firm. He may average about 10 jobs a month, mostly custom homes, some existing home work. He does most of the installing and estimating and the actual installation is under the direction of an installing foreman.

Advertising to Homeowners

Promotion and advertising methods used by the Prentiss Corp. have been wide in scope and variety. Copy in builder trade journals and regional magazines says:

"Like extra value? A home with Carrier forced air heat is a home that can be completely air conditioned at a very modest cost—half the job is already done." The reader is directed to the yellow pages of the telephone book for the name of the nearest Carrier sub-contractor.

A series of 10 full-page advertisements were used in the *Los Angeles Times* Home Magazine Sunday supplement, listing on another page the names of residential unit dealers in Los Angeles and adjoining communities, and offering a booklet on "Facts About Air Conditioning in Southern California."

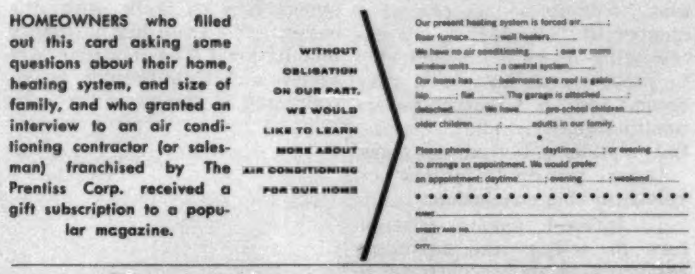
Two of the more unusual promotions used by Prentiss were mailing pieces. One of them had the theme "What Happens To Your Money" and pointed out that (1) a new auto depreciates to practically nothing in five years; (2) a vacation is fun while it lasts, but has no trade-in value; (3) a TV set depreciates to nothing in a few years; (4) an electric range is nice, but did you ever try to sell a used one? On the other hand, a residential air conditioning system always adds more to the market value of a home than its original cost, and doesn't depreciate quickly.

Another direct mail piece offered a year's gift subscription to *Sunset* magazine, popular West Coast publication, to those who would phone a dealer and permit him to interview the homeowner and survey the premises with the idea of making a recommendation for air conditioning. This drew some response, but Myers ran a telephone "screening" on some of

(Concluded on next page)

DIRECT ATTACK upon competitors for the homeowner's purchasing dollar is embodied in this direct mail piece which The Prentiss Corp., Los Angeles Carrier distributor, sent out through its dealers. It points out that money spent for a vacation is gone forever, that a new auto, TV set, or range depreciate to virtually nothing in 5 years. Air conditioning, however, in addition to all of the benefits it provides, will enhance the market value of a home almost equal to the cost of the equipment no matter how old it may be.

HOMEOWNERS who filled out this card asking some questions about their home, heating system, and size of family, and who granted an interview to an air conditioning contractor (or salesman) franchised by The Prentiss Corp. received a gift subscription to a popular magazine.


Just fill in the spaces below, and drop this card in the mail
WITHOUT OBLIGATION ON OUR PART, WE WOULD LIKE TO LEARN MORE ABOUT AIR CONDITIONING FOR OUR HOME
Our present heating system is forced air.....;
floor furnace.....; wall heaters.....
We have no air conditioning.....; one or more
window units.....; a central system.....
Our home has.....bedrooms; the roof is gable.....;
slip.....; flat.....The garage is attached.....;
detached.....We have.....pre-school children.....
older children.....; .....adults in our family.
Please phone.....daytime.....; or evening.....
to arrange an appointment. We would prefer
an appointment: daytime.....; evening.....; weekend.....
name
STREET AND NO.
city

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.
RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.
ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

GRADUATE MECHANICAL engineer with over thirty years' experience including chief of design and research, supervisor of national sales force, chief of application for refrigeration, air conditioning, and ultra-low temperature. We have functioned in all phases of refrigeration work. Married. No children. Will re-locate. BOX A6130, Air Conditioning & Refrigeration News.

LEADING AIR conditioning manufacturer announces the availability of experienced field service contact man having knowledge of product manufacture, distribution, parts and service administration. Past experience in all appliances. Contacted appliance distributor and brand accounts. Assisted with service training programs. Trouble shooter mechanical and administration problems. Information on request. BOX A6135, Air Conditioning & Refrigeration News.

MAN IN mid-forties desires to make change. Twenty years' experience all phases refrigeration and air conditioning. Now employed by largest university in country as service and maintenance foreman. Will travel or relocate. Prefer south. Other localities considered. Details on request. Thirty days availability. BOX A6136, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEER—Milwaukee—Eastern Wisconsin exclusive franchise available to represent Acme Industries, Inc. Must be qualified to sell packaged chillers, air handlers, cooling towers, evaporative condensers, air cooled condensers, coils, large packaged air conditioners. A challenging opportunity for aggressive salesman who insists earnings be commensurate with ability. Contact T. W. McGUIRE—Reg. Mgr., 230 East Ohio St., Chicago 11, Ill. Phone Mohawk 4-6124.

WORK IN St. Petersburg, Florida—Need experienced heating and air conditioning mechanic under 50 who is also thoroughly familiar with Ajax A5A-4 ice cube maker. Give complete record from hi-school to present employment and wages expected. Reply to M. I. SCHMIDT, Apt. 18, 6734 Central Avenue, St. Petersburg, Florida.

SERVICE MANAGER—New York air conditioning contractor requires manager with ability and experience in management, training, supervision and service sales for full charge of complete installation and service department. Year round, permanent position. Good salary and incentive plan. Knowledge of absorption systems helpful but not necessary. Replies confidential. BOX A6137, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 267 East 3rd Street, New York 9, N. Y., ORegon 3-7210.

EQUIPMENT FOR SALE

MODEL HH 2 h.p. automobile air conditioning compressors tapered shaft, vertical mount, complete with flywheel $33.95. Send for free circulars and catalogs on money saving refrigeration & air conditioning parts and supplies. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

ATTENTION!

An A-1 refrigeration manufacturer is now expanding its facilities and seeks the services of highly qualified men in the following categories of commercial refrigeration.

CHIEF ENGINEER

M.E. Grad. with refrigeration major and administrative ability, to supervise up to 40 man staff. Minimum 10 years on commercial refrigerators. Age to 50. Salary $10-12,000.

SUPERINTENDENT

Sheet metal experience and good administrator for department of 175 men. Must have complete knowledge of shears, brakes, etc. pertaining to comm. units. Salary $10,000 to $11,000.

QUALITY CONTROL

Manager with administrative ability to supervise 36 man department. Age to 50 and thorough knowledge of refrigeration principles—Salary $10,000.

INTERVIEW & RELOCATION PAID

WRITE BOX A-6134
Air Conditioning & Refrigeration News

Selling the Homeowner--

(Concluded from preceding page)

the dealers to see how they would handle the telephoned request for an interview.

"It was disheartening to say the least," the distributor relates. "I'm afraid that if actual prospects had been getting the same response as our telephone monitors, they would have gained the impression that the dealer would not even be interested in talking to them.

Problems of Selling

"Two problems are obvious in merchandising central systems to homes. The first is to teach men who are primarily mechanically or technically minded, how to sell the benefits of air conditioning to a homeowner. The second is to teach them how to use, and *sell*, the various financing plans that lessen the financial burden in the purchase of air conditioning."

In the opinion of W. D. Paulson, who heads up sales at General Electric's Air Conditioning Department branch in Los Angeles, it's the job of the industry not only to sell the public on the benefits of air conditioning, but also to educate them on what it costs.

"It's a mistake to try to make the public think that it can have complete refrigerated air conditioning for a couple of hundred bucks," he points out, "but on the other hand, the prospective buyers shouldn't be scared off by any indication that the cost of owning and operating an air conditioning system is out of his reach.

"Something like '60 days of comfort on our hottest days for less than $1 a day' might be in line."

There are many air conditioning contractors who think that having a nice, clean showroom with a reasonably complete display of products is strictly a waste of money and effort, that such "Hollywood" touches in their sales efforts are unnecessary.

Operating Showroom Display

It's perhaps appropriate then that a contractor who believes that a showroom that not only displays equipment, but shows it in operation, improves his chances of selling a customer, is located out Hollywood way.

That Caltemp, Inc., whose large showroom on W. Pico Blvd., is devoted to the display of a wide variety of equipment and component parts for air conditioning equipment, much of it ready to operate for the enlightenment of prospective purchasers.

In a separate, screened-off part of the display room, there is in operation an Airtemp year-round residential system, comprised of a model 1203 cooling assembly, and a 4210-2 gas-fired furnace. Ductwork is connected to the unit with outlet grilles so located that prospective purchasers may actually "feel" the conditioned air.

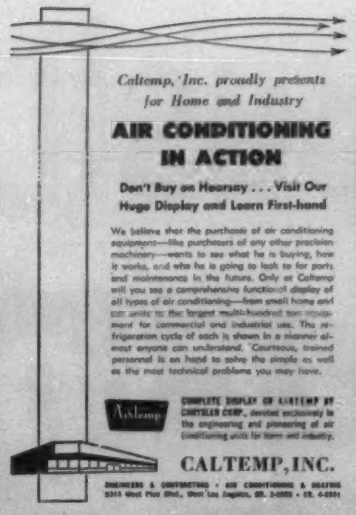
Other operating units include a 5-hp. condensing unit assembled for a typical outdoor installation; and a blower and coil assembly. Also showing are furnace heating elements, demonstrating points of good and bad construction, and a cutaway model of an Airtemp radial refrigeration compressor.

"We wouldn't try to say that the display in itself pulls a lot of people into the showroom," says Roy Ashburn, "but it certainly has proved helpful when you find a prospect who is interested in air conditioning.

"Most of them have little idea of what makes up an air conditioning system, or how it operates, other from what they are shown on literature sheets. So if they're really interested, they're delighted to get the chance to visit our showroom floor and see just how a system will operate. We think it gives us a great opportunity to get across our sales story.

"The builders like it too, finding it a handy point of reference when one of their customers wants to know about air conditioning. 'Just go down to the Caltemp showroom and see it,' they say.

"We make the point about the operating displays in practically all of our newspaper and telephone book yellow pages advertising. We also issued individual invitations to some key prospects, and this drew a pretty good response of people coming into the showroom."


Caltemp, Inc. proudly presents
for Home and Industry
AIR CONDITIONING
IN ACTION
Don't Buy on Hearsay . . . Visit Our
Huge Display and Learn First-hand
We believe that the purchaser of air conditioning equipment—like purchasers of any other precision machinery—wants to see what he is buying, how it works, and who he is going to look to for parts and maintenance in the future. Only at Caltemp will you see a comprehensive functional display of all types of air conditioning—from small home and car units to the largest multi-hundred ton requirement for commercial and industrial use. The refrigeration cycle of each is shown in a manner almost anyone can understand. Courteous, trained personnel is on hand to solve the simple as well as the most technical problems you may have.
Airtemp
COMPLETE DISPLAY OF AIRTEMP BY CHRYSLER CORP., devoted exclusively to the engineering and pioneering of air conditioning units for home and industry.
CALTEMP, INC.

DECLARING that "we believe the purchaser of air conditioning wants to see what he is buying" Caltemp, Inc. used this advertisement headlined "Air Conditioning in Action" to invite prospects to "visit our display and learn first-hand" about air conditioning systems, by viewing them in actual operation on the showroom floor.

By no stretch of the imagination could the E. L. Payne Heating Co. in Beverly Hills be called a typical dealer. The firm is an outgrowth of the Payne Furnace Co., which once supplied many of the heating units sold on the West Coast. Now a retailer of air conditioning and heating equipment, the firm employs nearly 50 service and installation men, usually 10 or more salesmen, 11 shop workers, and 16 staff members. Nearly 40 trucks are used by the company in its operations.

But if not typical, this dealer is obviously successful, and some of the principles it follows in its operation, as outlined by Gordon Payne, official of the firm, are worth noting.

Payne's business creed sums up the company's aim to benefit every customer: "Small problems can become big problems. Every customer deserves courteous attention and his problem deserves careful consideration."

Servicemen Carry the Mail

The service business is the basis of the Payne Co. operations. With some 10,000 heating service contracts, and quite a few for cooling systems, constitutes what Gordon Payne calls an "enviable entree."

"We use our servicemen as a postman," he says. "They carry and give to users promotion pieces that provide such information as list of products, list of installations of comfort cooling systems, and always a reply card indicating any interest from the user. We are also making plans to distribute the Minneapolis-Honeywell booklet 'Answers on Residential Air Conditioning' through the same method.

"We have, both by direction and by letting them follow their own inclinations, made specialists out of salesmen. One of the best ones limits his contacts to architects, who respect his ability as a designer of heating systems.

Considerable attention is given not only to training servicemen to be courteous and promotion minded, but to be considerate of the customer's physical properties.

"Don't clobber people's houses" is the succinct manner in which Gordon Payne puts this point, "and don't louse up a good heating system when you install central comfort cooling."

On Existing Home Jobs

With existing home jobs, find out as soon as possible how much the owner seems to want to spend for air conditioning. If it would cost $3,000 to condition the entire home, and the owner seems to want to spend only $1,200, let him know immediately that he can have part of his home air conditioned —and properly—but not all of it.

Where possible, Payne tries to install the comfort cooling system independently of the heating systems on existing homes. Most old homes, he points out, have adequate space for ductwork, and in some instances, other equipment. Also, in older homes, it is of first importance to air condition the second floor adequately.

Another factor in Payne's success is the fact that the journeymen steamfitters, refrigeration fitters, and sheet metal workers on their staff average over 15 years in the company's employ. Part of this is the manner in which the company treats employes, and the fact that they have the best of equipment with which to work. But the real answer, says Payne, is this:

"Give them steady employment."

WHEN A PROSPECT for air conditioning comes to the display room of Caltemp, Inc. in Los Angeles he can see in actual operation just about any kind of an air conditioning system that he might be interested in purchasing. Behind the paneled partition at the far end of the showroom is a complete year-round air conditioning system in operation. Ductwork along the top of the paneling carries this conditioned air into the store. Around the paneling are an air-cooled condensing unit (which can be operated), furnace heating sections, and a blower coil unit. In foreground are various room air conditioner models.

Auto Cooling Service, Patents Resume Next Week

Because this is a special issue devoted to Residential Air Conditioning, with the editors wishing to touch as many bases as possible on this one subject, publication of the Patent Digests and the "Servicing Auto Air Conditioners" series have been left out of this issue, but will be resumed next week.

air conditioning and refrigeration

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Phone: RENown 5813 (P.B.X.)
Cables: TEMTUR LONDON

LARGEST PRODUCER OF AIR CONDITIONING UNITS OUTSIDE THE U.S.A.

AIR CONDITIONED Sunny Isle LUXURY RESORT MOTEL
Just Has Everything!
$2.50 to Dec. 15 PER PERSON DOUBLE OCC. 20 of 92 rms.
WRITE FOR FREE COLOR BROCHURE OR SEE YOUR TRAVEL AGENT
ON THE OCEAN at 165th ST., MIAMI BEACH, FLORIDA

4 Ways Viking Gives You MORE yours for the asking!

1 Industry's Only Blower Bearing with Built-in Journal
Lighter loading, longer life.

2 Industry's Only Interchangeable, Non-flexing Wheels
9" through 15" sizes; for quiet hi-speeds.

3 Industry's Most Advanced Private Research Facilities
At your disposal for air development problems.

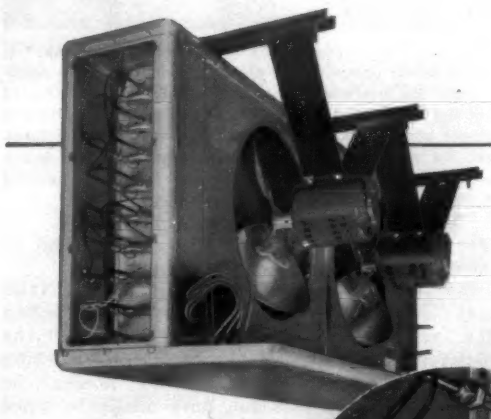
4 Industry's Best Technical Information Service for Design Engineers
All you need to know about air movement.

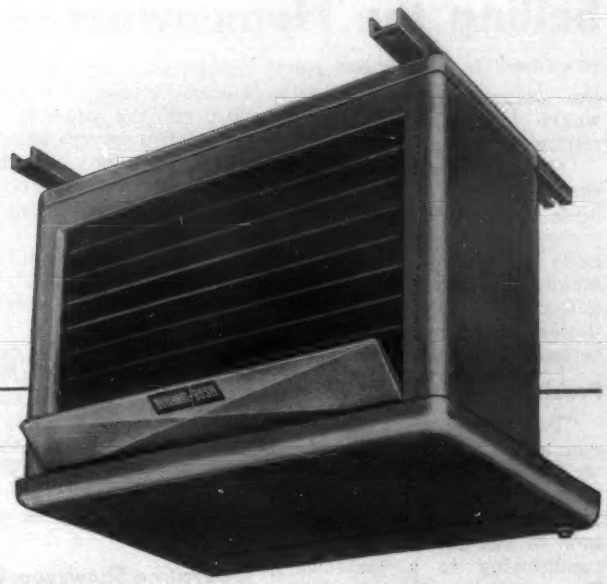
Gentlemen: Please send me more information about item 1 2 3 4*
* Put me on the mailing list.
Name
Title
Firm
Address
City State

VIKING AIR PRODUCTS
5601 Walworth Ave.
Cleveland 2, Ohio

8" through 15" Blowers, Blower Wheels, Furnace Humidifiers

Dunham-Bush

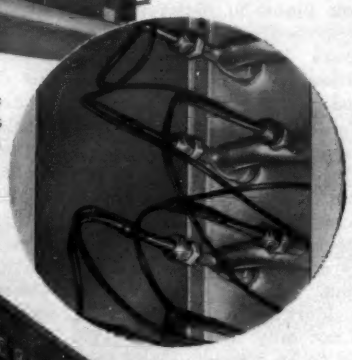




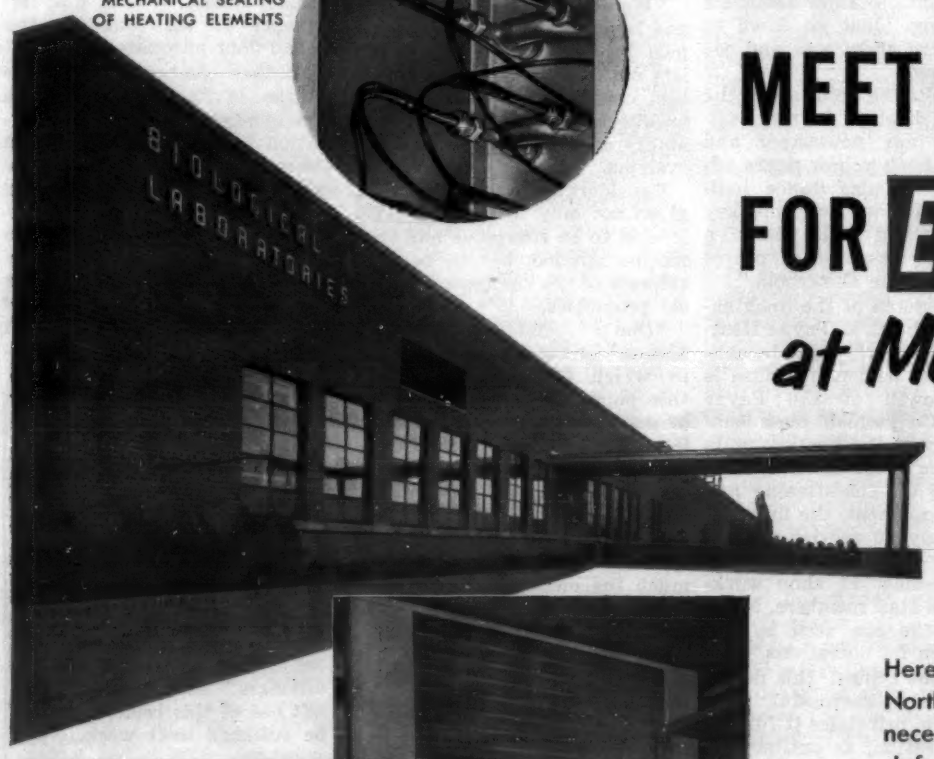
E D

ELECTRIC DEFROST UNITS MEET EVERY DEMAND FOR EFFICIENT DEFROSTING *at Merck-Sharp & Dohme*

BIOLOGICAL LABORATORIES



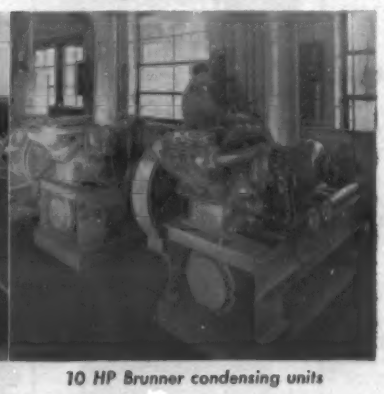
CLOSE-UP VIEW OF MECHANICAL SEALING OF HEATING ELEMENTS



Consulting Engineer.....ERNEST A. D'AMBLY, PHILA.
Wholesaler.....ACAR SUPPLY CO., PHILA.
Contractor.....WILLIARD, INC., PHILA.

'ED' 180 Electric Defrost Unit Cooler in Main Biological Storage Vault.

Polio vaccine storage in low temperature room



10 HP Brunner condensing units

Here at Merck-Sharp & Dohme Biological Laboratories, North Wales, Pa., to maintain the constant low temperatures necessary for the storage of polio vaccine there must be no defrost problems . . . and these Dunham-Bush Electric Defrost units insure trouble-free operation.

INNER-FIN Coil construction, exclusive with Dunham-Bush, permits the units to defrost from the *inside* . . . the most rapid, positive means of defrosting.

The heat source for defrosting is a specially designed heater cable installed within the inner tube. The greater surface area made possible by the Inner-Fin construction assures quick heat distribution, quicker defrosting, and minimum room temperature rise. The mechanical sealing of the heating elements gives positive protection against entry of any moisture into inner tube system.

For more information on these units or other products in the extensive Dunham-Bush line contact your nearest Dunham-Bush Sales Engineer or write direct.

Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

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